DOCUMENT RESUME

ED 275 480 RC 015 978

AUTHOR	Couto, Richard A.
TITLE	Fair Starts for Children. An Assessment of Rural Poverty and Maternal and Infant Health.
INSTITUTION	Vanderbilt Univ., Nashville, TN. Center for Health Services.
SPONS AGENCY	Ford Foundation, New York, N.Y.; Robert Wood Johnson Foundation, New Brunswick, N.J.
PUB DATE	Jun 85
NOTE	175p.; Research also sponsored by the James C. Penney Foundation.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	Breastfeeding; Child Development; Economically Disadvantaged; Family Planning; Females; *Health Education; *Health Needs; Health Programs; *Infants; *Low Income Groups; *Mothers; Outreach Programs; Poverty; Pregnancy; *Rural Areas
IDENTIFIERS	Kentucky; Maternal Infant Health Outreach Worker Program TN; Prenatal Care; Tennessee; West Virginia

ABSTRACT

The Maternal and Infant Health Outreach Worker Program (MIHOW) of Vanderbilt University's Center for Health Services gathered data on family planning, prenatal care, pregnancy outcomes, breastfeeding, and preventive child health care from 60 women in 6 rural, low income communities in Tennessee, Kentucky, and West Virginia. The resulting baseline was used to compare MIHOW program effectiveness, and to examine characteristics of women in poverty and how their poverty impacts maternal and infant health and health practices. The survey related measures of health care, status, and practices to resources, information, and access to care. Intermediate measures included adequacy of income to provide food at all times, type of support, sources of knowledge, and availability of transportation. Findings suggested resources for low income women and children were too low and that community-based home visitor programs were appropriate to provide additional resources. The survey found birth weights, contraceptive use, prenatal care, and breastfeeding all below national averages. Female-headed households, nonemployment income sources, age, and race were significant determining factors. Discussion of survey results contains 29 tables; survey data keyed to each table form the appendix. A map locates MIHOW survey communities. (LFL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED275480

FAIR STARTS FOR CHILDREN

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Richard A.
Couto
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

NOV 1986
RECEIVED
ERIC/CRESS

AN ASSESSMENT OF RURAL POVERTY AND MATERNAL AND INFANT HEALTH

A Report to the Ford Foundation,
the Robert Wood Johnson Foundation
and the James C. Penney Foundation

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Richard A. Couto, Director
Center for Health Services
Vanderbilt University

June 1985

RC 015978

TABLE OF CONTENTS

Page

Executive Summary 1

Preface and Acknowledgments 6

Section 1 - Introduction 8

    Maternal and Infant Health - The Standard of a Nation 9
    A Community-Based Health Intervention 10

Section 2 - Research Methods 12

    Questionnaire and Data Sources 13
    Sample Selection 14
    Methodologies 15

Section 3 - The Measures 17

    Outcome Measures 17
    Socio-Economic Measures 21
    Intermediate Measures - Resources 22
    Intermediate Measures - Information 24
    Intermediate Measures - Access 25

Section 4 - Community Measures 27

    Community Context 27
    Socio-Economic Measures 29
    Outcome Measures 32
    Intermediate Measures 37
    Conclusion 44

Section 5 - Individual Measures 45

    Outcome Measures 45
    Socio-Economic Measures 46
    Socio-Economic and Outcome Measures Compared 48
    Intermediate Measures - Resources 51
    Intermediate Measures - Information 57
    Intermediate Measures - Access 61
    Intermediate Measures Compared 65

TABLE OF CONTENTS (cont.)

Page

Section 6 - Discussion 72

Socio-Economic Measures 72
Socio-Economic Correlates of Intermediate Measures 73
Outcome Correlates of Intermediate Measures 74
New Resources for Improved Outcomes 75
Early Evaluation 79

Conclusion 81

Social Provision for Maternal and Infant Needs 81
Options 82
Obstacles 83
New Attitudes for New Policies 83

Resources 85

Appendix 88

Tables of Outcome Measures 89
Tables of Socio-Economic Measures 92
Tables of Socio-Economic and Outcome Measures 97
Tables of Socio-Economic and Intermediate Measures of Resources 107
Tables of Outcome and Intermediate Measures of Resources 115
Tables of Socio-Economic and Intermediate Measures of Information 131
Tables of Outcome and Intermediate Measures of Information 138
Tables of Socio-Economic and Intermediate Measures of Access 142
Tables of Outcome and Intermediate Measures of Access 148
Tables of Intermediate Measures of Resources 150
Tables of Intermediate Measures of Resources and Information 154
Tables of Intermediate Measures of Resources and Access 159
Tables of Intermediate Measures of Information 166
Tables of Intermediate Measures of Access 169

List of Tables

Page

Table 1 Outcome Measures 19
Table 2 Socio-Economic Measures 22
Table 3 Intermediate Measures of Resources 23
Table 4 Intermediate Measures of Information 24
Table 5 Intermediate Measures of Access 25
Table 6 Socio-Economic Measures by Community in Percentages 30
Table 7 Problem Socio-Economic Measures by Community in Rank 32
Table 8 Outcome Measures by Community in Percentages 34
Table 9 Problem Outcome Measures by Community and Rank 37
Table 10 Intermediate Measures of Resources by Community in Percentages 39
Table 11 Intermediate Measures of Information by Community in Percentages 41
Table 12 Intermediate Measures of Information by Community in Percentages 43
Table 13 X2 Correlations of Outcome Measures 46
Table 14 X2 Correlations of Socio-Economic Measures 48
Table 15 X2 Correlations of Socio-Economic and Outcome Measures 50
Table 16 X2 Correlations Socio-Economic and Intermediate Measures of Resources 53
Table 17 X2 Correlations of Outcome and Intermediate Measures of Resources 55
Table 18 X2 Correlations of Socio-Economic and Intermediate Measures of Information 59
Table 19 X2 Correlations of Outcome and Intermediate Measures of Information 61
Table 20 X2 Correlations of Socio-Economic and Intermediate Measures of Access 64
Table 21 X2 Correlations of Outcome and Intermediate Measures of Access 65
Table 22 X2 Correlations of Intermediate Measures of Resources 66
Table 23 X2 Correlations of Intermediate Measures of Resources and Information 68
Table 24 X2 Correlations of Intermediate Measures of Resources and Access 69
Table 25 X2 Correlations of Intermediate Measures of Information 70

List of Tables (cont.)

Page

Table 26 X2 Correlations of Intermediate Measures of Access 71

Table 27 Prenatal Care and Pregnancy Outcomes Comparison of MIHOW Participants and Women of Baseline Survey 78

Table 28 Infant Feeding Practices Comparison of MIHOW Participants and Women of Baseline Survey 79

Table 29 Caldwell Home Inventory Scores of MIHOW Clients and Control Group 79

List of Maps

Sites of MIHOW Communities 28

FAIR STARTS FOR CHILDREN

AN ASSESSMENT OF
RURAL POVERTY AND MATERNAL AND INFANT HEALTH

EXECUTIVE SUMMARY

Recent government reports in the Spring of 1985 have indicated the serious problems of very young Americans. The Congressional Research Service has reported that 22.2 percent of all children in America live in poverty. This is more children in poverty than any time since we began measuring poverty. Relatedly, the Public Health Service reported that we shall fail to meet the goals we set for ourselves as a nation to reduce low weight births and to increase prenatal care for all women by 1990. We may meet our goal of reducing infant mortality rates for all infants, but not for black infants. These reports suggest that a large portion of American children are not only in poverty but are also at risk for death or developmental delays. The largest portion of their risk is due to low birth weights or other negative pregnancy outcomes which are often associated with the poverty of their parents, especially their mothers. More than half the children in poverty are in female headed, single parent families.

The risk to the health and life of these children can be reduced by improved prenatal care for mothers and preventive health care and developmental activities for infants. One means to improve prenatal and infant care is a home visitor program that serves women who are at high risk for problem pregnancy outcomes.

This report is part of such a home visitor program, the Maternal and Infant Health Outreach Worker (MIHOW) Program of the Vanderbilt University Center for Health Services. The program is conducted by local women with training and supervision by a staff member of the Center for Health Services. Six MIHOW workers carry out the program in six rural, low income communities in Tennessee, Kentucky and West Virginia.

This report is based on data from a survey conducted in the summer of 1983 by the MIHOW workers with assistance from local women and staff of the Center for Health Services . Sixty women in each of the six communities were interviewed about family planning, prenatal care, pregnancy outcomes, breast feeding and preventive child health care.

The report has two purposes. First, it establishes a baseline from which to compare the clients of the MIHOW Program with similar women in the same communities and thus to evaluate the effectiveness of our intervention. Second, it allows us to examine characteristics of women in poverty to better understand how their poverty impacts on maternal and infant health and health practices. The report does not have as its purpose to replicate what we know of the relation of health status and income. Rather we assumed this relationship; took measures of the health care, status and practices of a group of low income women; and then sought to relate these measures to the resources, information and access to health care of the women to better understand how a home visitor intervention may be effective.

We devised intermediate measures of resources, information and access which we believed had bearing on both poverty and health. Intermediate measures of resources, for example, go beyond income and measure the adequacy of household income to provide for food at all times or to pay bills. We also used the form of income, that is whether income comes from employment or not, as a measure. Other measures of resources include the amount and type of support women have during pregnancy and after. We also took into account whether or not a woman was in a female headed household. The intermediate measures of information we devised indicate the opinions, knowledge and sources of knowledge which women whom we interviewed have on matters such as family planning, prenatal conditions and breast milk. The intermediate measures of access indicated the availablity of transporation to health care sources and the forms of payment women used for health care.

We found several differences between the women of our sample and women nationally. Women of our survey used birth control, planned pregnancies, received prenatal care and breast fed at much lower rates. They had higher rates of low weight births and stillbirths than women nationally.

The women of our sample differed significantly among themselves in health status and practices. Generally, women with more income and education practiced more birth control; had more planned pregnancies and prenatal care; and reported more breast feeding and higher levels of preventive child health care.

But income and education only begin to tell the story of the factors influencing the health status and practices of low income women and their children. The women we interviewed reported different amounts and forms of resources, information and access to health care. Not surprisingly we found that women with the lowest incomes most frequently reported having inadequate funds for bills and food. These same women were most often in female headed households and depended on nonemployment income. The women with the lowest incomes, below $250 a month for the household, had a characteristic in common with the women reporting incomes above the poverty level - they reported less of a support system than other women. However, the nature of the support system was different and women with the lowest incomes tended to rely exclusively on family members for support.

There were also significant differences among the women of our survey in terms of the information they had. Age and race were the important determining factors. Young women and black women reported less knowledge of prenatal conditions which indicate a problem with the pregnancy. Black women reported a much lower opinion of breast milk compared to formula. This coincides with the much lower rate of breast feeding we found among the black women of our survey compared with the white women. Young women and women with the lowest incomes tended to depend more on family members for information on family planning, pregnancy and child care.

Transportation and forms of third party payment for health care were two measures of access to health care that differentiated the women we interviewed. Younger women and women with less income or education than others reported significantly less access to transportation. However, these same women were more likely to have some form of third party payment for prenatal care. Transporation was also less available for women reporting inadequate funds for food and their bills, dependence on their families for support, nonemployment income sources and residence in a female headed household. Again, however, women with nonemployment income sources and in female headed households were more likely to have some form of third party payment for prenatal care.

As in the case of support networks, women in the lowest income categories and women with household incomes above poverty levels shared a similarity in terms of third party payment mechanisms for other forms of health care. This time however they had more rather than less than women in the middle two income categories. There was a difference in the mechanism of payment. Lowest income women reported having Medicaid while women with above poverty income levels reported having work-related insurance.

The differences among the women we interviewed on these intermediate measures correlated significantly with some of our measures of family planning, prenatal care, pregnancy outcome, breast feeding and preventive child health care. As might be expected women with knowledge of birth control used it and had more planned pregnancies than women without that knowledge. Likewise, women with an opinion that breast milk is better than formula were much more likely to breast feed. There was a significant and disturbing correlation among women who reported little knowledge of signs of serious pregnancy problems and women who reported no prenatal care. Surprisingly, women who reported greater reliance on family members for information reported less breast feeding and less preventive child health care.

The lack of transportation was also linked very strongly and significantly with less preventive child health care. There was a significantly similar pattern of prenatal care and preventive child health care even though transportation seemed less of a problem for women in acquiring prenatal care.

Women with more resources reported significantly more family planning, prenatal care, positive pregnancy outcomes, breast feeding and preventive child health care. Women reporting inadequate funds for food and bills reported significantly fewer prenatal care visits than other women, nearly significant less preventive child health care and nearly significant more negative pregnancy outcomes. Women reporting higher levels of support also reported more prenatal care. But the more that support came from within the family rather than from diverse sources, the more likely a woman was to report an unplanned pregnancy and not breast feeding her child.

Women in female headed households and with nonemployment income sources reported far different outcomes than other women in our survey. Women in both categories reported significantly more unplanned pregnancies and significantly less preventive child health care. Women with nonemployment income sources also reported significantly lower rates of breast feeding.

Our findings suggest the following:

1. Resources for low income women and children are too low.

Women who reported inadequate funds for food and bills most often had incomes at the level of Aid for Dependent Children payments. Although enrollment in this program permitted some of them Medicaid coverage and other benefits for health care costs, it left basic necessities unmet. Among these is transportation, the lack of which impinges on preventive child health care. The situation is even more serious for other women without Medicaid. Many of the women in our survey, 32 out of 94, with incomes less than $250 a month did not have Medicaid. A far greater proportion of women, 88 out of 192, with household incomes between $251 and $750 a month had neither Medicaid nor other health insurance. This may explain why income and fewer prenatal care visits are directly related among the women we interviewed.

This suggests the need to increase resources for the very poor. In this regard, the recent legislative changes to make children in two parent families eligible for Medicaid is appropriate. More needs to be done to make more low income families eligible for cash transfer payments and those payments need to be increased to provide adequate resources for food and other necessities. While much has been done to increase free or reimbursed prenatal care for low income women much remains to be done.

The survey also provides evidence that cutbacks in assistance to families with poverty level incomes is antithethical to promoting improved pregnancy outcomes and healthier children. Unfortunately, budget cuts to meet recent deficits are easiest to gather from programs of categorical assistance to those, such as women and children in poverty, who have the least political organization and influence to prevent them.

2. A community-based home visitor program seems appropriate to provide low income women an additional resource and, in particular, to reduce the risk that some women and infants presently run and which

recent government studies indicate are not declining at the rate we set as a national goal.

Many women still face barriers to prenatal care. These include a lack of transportation and the inability to pay for prenatal care. A home visitor cannot solve all problems of access and resources. A home visitor can work on behalf of all low income women of an area to see that what resources are available are put to use and can work to organize locally to make new resources such as support groups available. A home visitor can also meet the information needs of low income women. According to the information of our survey low income women, and probably men, need more information on birth control and breast feeding if their practice of family planning is to increase. Likewise, knowledge of pregnancy and prenatal conditions needs to be increased.

As an additional resource to low income women, a home visitor must understand the resources the women already have and work with them. In the case of the women with the lowest income, the least support and the most need, those resources are family members. A home visitor may intervene in family relations on matters of the most private and confidential nature, i.e., family planning, pregnancy and child care and development. This suggests home visitors need preparation and training for their role but they need familiarity with the community and its members as well.

It is too early to assess our specific community-based home visitor program but preliminary evaluations are encouraging. The women in the MIHOW program report more prenatal care and fewer low weight births than the women of our survey even though the women in the MIHOW program were on the average at greater risk for more problems because they were younger, had less education and were more often unmarried. The children of the women in the MIHOW program also report better scores on the Caldwell Home Inventory, a series of scales of child-parent interaction with important implications for development, than children of a comparable group of women in the same communities.

These results are encouraging. They are part of one program to intervene to provide children of low income families a fair start in life. But what is needed is a national effort to reduce the risk of death and poor development for children in poverty. The measures of the health status of children, especially poor children, are in fact measures of society which express, in part, our recognition of the relationships and responsibilities which are our bonds as a society. Certainly, any society that cares for its future must recognize the relationships and responsibilites of all of its members towards its very youngest members for they embody a society's future.

FAIR STARTS FOR CHILDREN

AN ASSESSMENT
OF RURAL POVERTY AND MATERNAL AND INFANT HEALTH

PREFACE AND ACKNOWLEDGMENTS

This report is part of an effort of foundations, a university and several private, non-profit groups in six rural, low income communities to fashion an effective intervention to improve pregnancy outcomes and infant health among low-income groups in the United States. These interventions form the Maternal and Infant Health Outreach Worker Program (MIHOW) of the Center for Health Services at Vanderbilt University. The Ford Foundation Fair Start/ Child Survival Program and a grant from the Robert Wood Johnson Foundation support these interventions. The J.C. Penney Family Foundation provided support for the survey which is the basis of this report.

This effort is in the American tradition of volunteer and private efforts to provide for the needs of dependent populations. It is necessary because there is a large gap between the indices of the maternal and infant health of all Americans and those of the poor. Moreover, these private efforts are necessary because the public interventions and provisions for maternal and infant health are inadequate or at best insufficient. These public interventions and provisions have increased and improved over several decades as have the health indices of mothers and infants. Yet profound differences in health measures based on socio-economic status still exist among American women and infants. The MIHOW intervention is important because it may identify low cost and effective interventions which may become a model for other private, local efforts and perhaps even a part of the public repertroire of services to address the specific needs of low income women and children.

This report serves the MIHOW program in the following ways. First, it identifies a baseline measure of behavior, attitudes and outcomes among women in the communities in which we are working with which to compare women and infants who are part of the intervention program. Second, it examines the relation of socio-economic characteristics with the desired outcomes of the intervention program to better target an intervention of home visits, advocacy and community organizing. The emphasis of the report is not on broad socio-economic measures and their relation to pregnancy outcomes and infant health. These associations are well documented already. Instead, this report deals with intermediate measures of resources, information and access which may help explain how poverty impacts on maternal and infant health. These measures also point to some elements of the problem that are amenable to effective local intervention.

Acknowledgments

There are many people to acknowledge because without them the study would not be possible. The foundations already mentioned provided funding. The Student Health Coalition provided four students who directed the survey. MIHOW workers in each of the six communities coordinated the local survey. They are Minnie Bommer, Mary Elliott, Marian Colette, Tilda Kemplen, Linda Marlow, Darlene Kent and Linda Stein. Local women in each community conducted the survey. Three hundred and sixty women in the six communities answered the survey. Kathleen Hoover-Dempsey and Celeste J. Simpkins shared with us their work on the Tennessee Psycho-Social Risk Screening Tool and pointed us in the direction of proxy measures of poverty that have significant bearing on pregnancy and health. Idella Williams and Mary Charles Redding coded the data; Charles Wilmoth and David Reid supervised the coding and created the first computer file; and Dana Mayberry hunted through the data to record measures we had missed the first time. Vivian Valdmanis is primarily responsible for the analysis of the data. Randolph Parks assisted in devising measures and was primarily responsible for the measures on negative pregnancy outcomes and on the Caldwell Home Inventory. His work polished our analysis. Robert Halpern and Terry Bond from High/Scope assisted in the formation of the survey instrument and in the analysis. Their work was invaluable. Robert Halpern provided valuable advice for revisions of an earlier draft which made the analysis clearer. Rosalind Hammond, Reedy D. Hickey and Susan Schewel also provided critical support and comments for revisions of an early draft. Kelen Hicks processed all this information into print form. Barbara Clinton, who directs the MIHOW project, worked and worried with this survey from the very first to the very last. No one could have helped more or better. I have used material she prepared for another report in the Discussion Section of this report.

I am happy to share with all of these people all the strengths of this report. They have made it better. If it has shortcomings, the responsibilty for them, like the responsibilty for the study's findings and conclusions, is mine.

SECTION 1 - INTRODUCTION

The quality of life of individuals who are dependent on others is an important measure of a society. The social provision of goods and services for the very young and old, the poor, the disabled, the imprisoned or the unemployed offers important insight into a society's view of the relationship and responsilities its members have to one another.

The social provision of goods and services for dependent populations in America is relatively undeveloped in relation to its resources and the provision which other countries, some with fewer resources, make. One reason for this is the radical American preference to key the provision for a peron's needs such as income, health care, education, shelter, transportation and energy to the individual person rather than to society. The social provision for the needs of dependent groups is given reluctantly and set at minimum levels - "safety nets" - in order to preserve or to stimulate individual initiative. This minimum provision stems from and reaffirms a common belief that individual initiative is rewarded in a society with sufficient opportunity and that individual initiative benefits all members of society.

The Reagan administration has reaffirmed this belief system and the American aversion to the social provision of goods and services to dependent groups. The invisible hand which distributes social goods through individual effort now is also entrusted to hold a socially provided "safety net." The safety net has been readjusted and set more closely to the ground. The public forms of assistance for the dependent, categorical assistance programs, are and have been the clearest single target for deficit reduction and budget cuts. Consequently, we, as a nation, are reducing the modest commitments we have made for the dependent. These groups are far less organized or politically powerful than other groups faced with reductions in federal programs and consequently objections to the reduction of aid to them are less politically efficacious than protests about other budget cutting. Obviously, the reaffirmation of a set of values and beliefs in the individual provision for basic needs is very bad news for many dependent Americans and may have or has had severe consequences for many of them.

14

Maternal and Infant Health - The Standard of a Nation

Infant mortality and health are problems which embrace the dependent population of very young children and illustrate American attitudes towards the dependent. Prenatal and infant health care, though more available now than ever before, are still not universally extended despite society's obvious stake in healthy children and the clear relation of prenatal and infant health care to healthier children. Instead, prenatal and infant health care are allocated on the basis of the ability to pay or at no cost or reduced cost to those who are unable to pay the full cost if they are certified poor and/or have clearly defined impediments to pursuing opportunities to end their poverty. We provide for the prenatal needs of some women and the health care of some infants, as we provide for other needs of other groups of dependent people, according to their income and their merit or worthiness.

The provision of health services through Medicaid and the relation of Medicaid to Aid to Families with Dependent Children (AFDC) is an obvious case in point. Not only are the income standards for eligibility set very low, generally at a fraction of the federal poverty guideline, but additional regulations are applied pertaining to the number of adults in the household and their ability to work. Recent federal and state legislation has recognized the negative impact which such a criterion has on the family. Families of the working poor and families in which the father is unemployed but remains in the home are generally ineligible under past standards. Though this criterion was not intended to disrupt families, its consequence was disruptive. Women and children found themselves better off without males in the household if those males were able to work but unemployed because their presence made their wives and children ineligibile for public assistance of income or health care. New standards will extend Medicaid coverage to children whose families are eligible by income for the program whether or not there are two parents in the home.

It is obvious that providing social guarantees for categories of people who pass some test of worthiness has unintended consequences. It is equally obvious that this form of social guarantee and the minimal amounts of assistance we apply have their limits. Infant mortality rates remain higher in the United States than in countries with smaller gross national products and lower per capita income levels. Recent declines in infant mortality have not only slowed down at the level of 11 infant deaths per 1000 live births; but glaring inequalities in infant mortality rates among groups of people with different incomes persist or have increased. These differences are in an inverse relation; poor people have higher infant mortality rates and black infant mortality is generally at about twice the rate of whites.

In early 1985, the Public Health Service reported that this nation would not achieve goals for the reduction of infant mortality, low birth weights and improved prenatal care (Mason). Some maintain that our inablity to achieve the goals of health improvement we set for ourselves is related to cutbacks in federal programs especially those providing supplemental nutrition to pregnant women and new mothers and their infants (Hearings). Although this is contested, it is clear that the problems are related to poverty and that there are great discrepancies in maternal and infant health among subpopulations of the country and regions of the country based on wealth and poverty. Ten of the eleven states with the highest infant mortality rates, for example, are in the South (Children's Defense Fund; Southern Regional Task Force). In face of the enduring problem of poor maternal and infant health among some, the U.S. Public Health Service termed the recent decline in improvement as "disquieting" (Brandt). Whether disquieting or "grim" as the Children's Defense Fund terms them (Hearings 226), the prevailing figures or maternal and infant health as well as the recent decline in improvement are measures of American attitudes towards the dependent.

A Community Based Health Intervention

This report discusses maternal and infant health among two dependent groups, the very young and the very poor. It explores the relation of characteristics of women in six rural, low income communities and pregnancy outcomes and infant health. The purpose of the report is not to visit familiar terrain and to repeat what we already know about the relation of poverty, illness and poor health care. Rather it probes for some specific ways in which poverty impacts on health practices and status. We ask not only how income, education, age and race are related to health practices and status but also what resources, information and access do rural poor women have? We ask how these items relate to their health practices and status? And what these relationships suggest about effective interventions to improve pregnancy outcomes and the health of young children?

The intervention we are concerned with primarily is a home visitor program that offers health education and client advocacy in several forms. It is based in local community organizations, most often a primary care clinic. Through this intervention we deal with aspects of poverty and health which local people, with modest resources and training, can change and thus improve health practices and outcomes. This form of intervention is a middle approach. There is little doubt that full employment, the eradication of poverty and additional formal education would have profound and beneficial impact on the health of mothers and infants. There is also little doubt that high tech interventions have saved the lives of many infants and contributed to the decline of infant mortality. However, local residents of rural, low income communities do not have the power to carry out the social and political revolution which the first strategy requires. Nor do they have the means to replicate tertiary care facilities locally. Either approach would involve an exorbitant social and economic cost and only the first approach of improving socio-economic measures would likely result in clear improvement for infant and maternal health.

Evidence exists that technological interventions on behalf of high risk infants lead to other problems and costs. Not only is the intervention during the neonatal stage expensive (Boyle et al.) but costs continue as the infant matures and requires additional therapy to deal with handicaps which are associated with low birth weights (Ruiz; Walker et al.). In other words, it not only becomes more and more expensive to reduce infant mortality by saving the lives of very low birth weight infants but that form of intervention raises serious questions about the quality of life that it provides. The decline in the rate of decrease in infant mortality in the past year suggests to some that the effectiveness of technological interventions on behalf of high risk infants may have peaked. This possible new limit to technological intervention along with its already apparent limits and problems suggest that it is now eminently reasonable, as it probably always has been, to seek interventions that reduce the number of women and infants at risk rather than expand costly resources for their treatment (McCormick et al.:804). We know that the single greatest cause of neonatal mortality and developmental delays is low birth weight. We also know there are social factors associated with low birth weights that can be redressed to prevent and reduce the number of low weight births (Dunn).

This report and the program it is part of is a middle ground then because it assumes the relation of poverty and health and that we are unlikely either to eradicate poverty or to change the health care system in a major way. It focuses then on what resources, information and access local people, with modest support and some training, can provide to reduce the health risks which face poor women and children. This middle approach is not adverse to larger, more systemic change in either our support for the poor or the provision of health care. It simply emphasizes what can be done here and now about a problem before us. Moreover, by demonstrating what can be done now, perhaps this program, if proven effective, can provide direction for other and larger programs to deal with poverty and change in health care.

SECTION 2 - RESEARCH METHODS

Our data come from a household survey conducted in six rural, low-income communities during the summer of 1983. Each of the six communities is the site of a community-based intervention in maternal and infant health. Two of the communities are in West Virginia, two are in Kentucky, and two are in Tennessee. Four of the six communities are in coalmining areas in the Appalachian region, and the other two communities are in farming areas with some manufacturing plants. The first purpose of the survey was to establish baseline measures of maternal and child health and prenatal and child care practices with which to measure clients and outcomes of our intervention program. The second purpose was to ascertain reasonable paths of intervention based upon what we learned about the relation of the outcomes with which we are concerned and the resources, information and access to health care which the women of our survey had.

The survey itself had a community base in keeping with the nature of the intervention. Two teams of two students from the Vanderbilt University Appalachian Student Health Coalition supervised the conduct of the household survey in the six communities. The Maternal and Infant Health Outreach Workers who staff the intervention program, MIHOW,in each community assisted the students in the conduct of the survey. The MIHOW workers recruited local women to be household surveyors and selected the women to be surveyed. The students trained these local residents in survey techniques and supervised the conduct of the survey and the coding of information.

Several people and institutions developed the survey instrument. Richard Couto, Director of the Center for Health Services at Vanderbilt University, was primarily responsible for assembling and developing the questionnaire. The High/Scope Foundation provided consultation and advice on the questionnaire in large part based on their experience with a similar survey with another Ford Foundation-funded maternal and infant intervention among migrant workers in Florida. Barbara Clinton, Associate Director of the Center and the Director of the MIHOW project, also played a key role in the development of the questionnaire and supervised the field testing of the instrument.

The MIHOW workers and other representatives from the six communities reviewed preliminary drafts of the questionnaire and made suggestions to better adapt the questions to the women of their community. The same survey instrument was used for all six sites. The insights and questions derived from these initial discussions proved to be invaluable in the conduct and analysis of the survey. Particularly useful was the suggestion to conclude the survey with an open question about the needs of young mothers, pregnant women and infants in the community and the issues and services which respondents felt local people would be willing to work on. Consistently, the women we interviewed identified a lack of jobs and low incomes as the major problem they faced. In addition, they singled out the lack of services including health care and transportation as a problem. The lack of recreation programs and group activities for children and parents was less often mentioned among their problems but consistently mentioned from one community to the next. Another suggestion coming from the discussion of the survey with the MIHOW staff was the importance of an early report back to them and the surveyors about the survey results. Oral reports were made at the end of the summer of 1983 and other oral reports as well as much briefer written reports have been provided to the MIHOW workers since then.

Questionnaire and Data Survey

The questionnaire contained approximately two hundred and fifty questions and required up to an hour to administer. Not all respondents were asked all of the survey questions. Some sections of the questionnaire pertained only to women who were pregnant at the time of the interview, and other sections were specific to women who had children under two years of age. The questionnaire included items from the Tennessee Psychosocial Risk Assessment instrument developed at the Peabody College of Vanderbilt University; items from a similar survey in Florida which the High/Scope Foundation had developed; and items from the Denver Developmental Screening Test. All together these questions approximated two-thirds of the instrument. The remaining questions dealt with such matters as support networks and the nature of local health care services. We formulated these latter questions in light of our conduct of a home visitation program and our need to plan effective interventions as well as to evaluate their effects.

The only data gathered were the responses of the women surveyed. Surveyors did not consult hospital and medical records to corroborate the information of the women. Such a step would have involved an expense and a coordination of local and distant health care providers that was prohibitive. In addition, local women conducted the survey and the problems of acquiring access to and maintaining confidentiality about the private medical records of other local women were too great to attempt corroboration from medical and hospital records. The task was too large for MIHOW staff at each site to perform alone. Consequently, the data for our analysis is limited exclusively to the responses of the women surveyed.

This lack of record consultation is a serious limitation on the epidemiological aspects of the survey, but it is without consequence for other aspects of the survey. Records would have been more reliable on measures of birth weights, the number of prenatal care visits, health visits for the child and other such measures. On the other hand, consulting records of diverse providers in six different communities would not have given us measures on breast feeding practices, income or other characteristics important to an intervention. Only a household survey could provide information on the opinions and knowledge of the women on specific prenatal conditions, their support networks, the nature of their support, thier use of prenatal care and their beliefs and practices in regard to pregnancy and child rearing. Consequently, while we lost some epidemiological rigor by not consulting records and relying exclusively on the reports of the women, we gained important information on the women themselves, their situations, beliefs and practices.

Sample Selection

The sampling process we used provided us with a group of women which is representative of women of childbearing age in the six communities we serve. Women were selected from areas in each community from which clients of the MIHOW program were likely to come. A MIHOW worker in each site selected a sample for the household survey. The selection of the sample varied from site to site. In one instance, the MIHOW worker was part of the staff of a clinic and in conjunction with the clinic staff identified an area in the community with more obvious need and less utilization of the clinic services than other parts of the community. In another community, the MIHOW worker attempted a broader approach and the surveyors spent equal time in several areas in the county where clients in the program were common. These sampling procedures produced a group of sixty women in each community who were representative of the women from the areas where we are conducting the MIHOW program. These sets of sixty women constitute a fairly accurate baseline with which to measure the problems of maternal and infant health in each community. Due to problems with some incomplete interviews and with the selection of women who were neither pregnant at the time of the interview nor mothers of children under two some interviews had to be omitted from the final analysis. Thus the total number of surveys included in the analysis is 350.

The women in each of the six samples are representative of the communities in which MIHOW is working but they are not necessarily eligible for the MIHOW program. These women represent a geographic portion of each community singled out for its economic need. Consequently, we would expect their measures to be worse than a sample of women drawn from the entire community. On the other hand, the MIHOW program will serve only some of the women in each of the areas we surveyed and in general only those women with the greatest need and at highest risk for complications during pregnancy. Consequently, some of the women we surveyed are not eligible for the MIHOW program and in general represent a slightly higher level of socio-economic status with corresponding characteristics of education, employment, and housing than the women who are clients of the MIHOW program.

Thus the women of our sample are probably worse off than the average woman of childbearing age in the same community but on the average better off than the women in the MIHOW program. In general, the clients of the MIHOW program have less income and education and are at higher risk for problem pregnancies than the women of our sample. The differences between the clients of the MIHOW program and the women in this survey will, of course, become clearer as more women enter the MIHOW program and data on them are recorded and compiled.

Methodologies

The methodology of this survey is a combination of standard survey techniques and participatory research. The methodology varied from standard survey techniques by its reliance on local residents in the conduct of the interviews. A great deal of discussion with local MIHOW staff people preceded the actual survey as well as the final draft of the survey instrument. The MIHOW worker at each community was responsible for recruiting local residents to assist in the conduct of the survey. The Student Health Coalition provided two sets of two students to instruct the local residents in survey techniques and make them familiar with the instrument both in filling it out and coding. In each community between four and eight local women assisted in the conduct of the survey. Our procedures differed from participatory research as well because the subject of inquiry was brought to the community rather than their own initiative and most of the analysis and reporting was done apart from a broad community base.

This hybrid methodology has its problems. The combination of methods undoubtedly contributed to the many problems that we had in the coding of the information. Transfering information from survey forms to computer tapes is a frequent bottleneck of survey research and a particularly severe one in cases where many people are available to conduct the survey but very few to enter the data into the computer. At the same time, the large number of different people involved in the survey and in the coding of the information requires someone to check and double check the data for errors and standard interpretations of responses. This of course was done in order to bring our data in line with the canons of survey research. By doing this however we lost some of the advantages of participatory research which come with involving the community people, who produced the survey information, in its interpretation. This involvement is the most likely means to stimulate action from local residents on the problems they documented. On the other hand, without such an effort the validity and reliablity of the entire survey would have been jeopardized.

But this hybrid of survey research and participatory research also has advantages. The first advantage is the low cost of this hybrid. This survey would have had a prohibitive cost had we used professional surveyors in the six communities which extend from West Tennessee to West Virginia, approximately the length of Great Britain, and over a six week period of time. Financial resources to conduct such a survey are ordinarily not available to community groups and they were not available to us. For a fraction of the cost of using professionals we utilized students and community residents. There is a clear and decided limitation related to the management of the data which is a consequence of this technique but this technique makes it possible to produce information which otherwise could not be produced with limited resources.

In addition, by utilizing people within the community in the production of this information we hoped to create greater awareness of problems within the community and to identify local residents willing and capable to address problems connected with maternal and child health. In fact, one surveyor succeeded a local MIHOW worker when the latter resigned, and in other communities, MIHOW staff are employing former surveyors as assistants in home visiting.

The limitations of this hybrid of research methodologies are important but not insurmountable and its benefits make the effort to deal with the problems of such a methodology worthwhile. The survey represents a form of community and campus partnerships in research which is important. It represents an inexpensive method for community groups to gather important information on their needs and on possible methods to address them and a valuable use of university resources.

SECTION 3 - THE MEASURES

The goals of the MIHOW program include improving prenatal care utilization; reducing the number of negative pregnancy outcomes; increasing the number of women who breast feed their children; increasing practices of well-child care; improving child development in the first two years; preventing illness; and, of course, increasing the percent of children living past the first two years of life. Family planning is inevitably entailed in this work although it is not a stated objective of the program.

Outcome Measures

Items from the survey provide us several measures for the starting points of these MIHOW intervention goals. We asked all the women we surveyed if they were using birth control and whether or not their last pregnancy was planned. This gave us measures on family planning. We asked pregnant women when they began prenatal care and women who had children the number of prenatal visits they had made. We used three measures of negative pregnancy outcomes: low birth weight, below 2,500 grams or 5 lbs. 8 oz.; stillbirths; and birth defects. These measures were combined in a single measure for our analysis, Negative Pregnancy Outcome. We calculated this measure without counting the same birth twice; for example we counted a reported birth defect that was also a low weight birth only once, but we did not weigh one outcome as more serious than another in devising our measure of Negative Pregnancy Outcome. We were stringent in the last two measures of Negative Pregnancy Outcomes. We counted a pregnancy outcome as a stillbirth only if the gestation period was reported as six months or more, not five months as other studies have done. Likewise, we counted only three of the six reported birth defects. We excluded some reported birth defects if the survey response did not offer adequate identification of the defect. Thus, we included births indicating Down's Syndrome, a malformed foot bone and hypospadia. We excluded cases reporting insufficient data relating to respiratory problems. We discarded our measure of prematurity because of the difficulty in calculating a gestation period and the possible unreliablity of reported gestation period length. Consequently, this report runs the risk of underreporting negative pregnancy outcomes among the women we surveyed. We preferred this risk to its alternative and the consequent problems of validity and reliability.

Two other outcome measures were single items or a few combined measures. We asked women with children under two years of age if they breast fed their youngest child. We also asked these same women if that child had his or her shots and whether or not the child had been taken for a physician visit within the first six weeks of life.

Responses to these two questions were combined into a single measure, Preventive Child Health Care. We also asked if their most recent child, born within the past two years, was alive or not. Anecdotal evidence of the surveyors indicate a high number of infant deaths among the 250 infants of our survey. We counted only one based on the response to this question and other information provided by the surveyor. The number was obviously too small to permit including this measue in our analysis. It is most probable that the actual rate of infant mortality is between our conservative estimate and the anecdotal evidence. This is all the more probable given the high rate of low weight births.

We constructed an elaborate measure of child development which unfortunately did not prove useful. We selected items on the Denver Development Screening Test which we felt would be appropriate for specific age cohorts of the children involved in our survey. In general, we used intervals of three months, and the number of scale items varied from three to eight among the age intervals. We limited ourselves to activities that the mother could report on since time and other considerations did not permit our surveyors to conduct the test itself. Items on our scale came from three parts of the Denver test personal-social, verbal and gross motor. We calculated z-scores for all the children to establish a common score despite the diversity of items and number of items. We then divided the children's scores into three equal parts - high, medium and low - in order to have a sample size large enough for analysis. We used several tests for the scales and arrived at satisfactory levels of reliablity to permit comparisons among the children based on the responses of their mothers. We also combined the separate scale scores into a single score of child development. Our analysis of these measures yielded too few significant findings to include in this report. Our findings may be due to the inadequacy of our measure or they may be accurate in suggesting that there are few significant differences among the women of our survey in terms of child development. We believe our measure was inadequate to measure differences.

We were unable to construct a measure of child illness as well. Although many survey questions related to speicific ailments, the number of cases reported per illness was insufficient to permit statistical analysis. We were unable to combine responses to form composite scores as we had done with negative pregnancy outcomes. It should be noted that some of the ailments, such as fractures, burns, and periods of unconsciousness, were intended to identify possible child abuse. Three cases of broken bones among 250 children were reported and all three cases reportedly were taken to a doctor for care. Twenty-two burns with blisters were reported among 250 children. Only eight of these children were taken to a doctor for care, reportedly. MIHOW staff members felt this large number of burns was explicable by the presence of coal or wood burning stoves in the homes of the children. Three reported cases of accidental poisoning were recorded among the children in the survey all of whom received attention reportedly. No cases of unconsciousness were reported. The small number of reported cases did not permit us to conduct a statistical test on these measures or a combination of them. On the face of the reports however, indications of child abuse were low.

Our Outcome Measures and the items used to measure them are presented in Table 1.

Table 1

OUTCOME MEASURES

Birth Control Use

This item was analyzed only for women who reported not being pregnant at the time of the interview since pregnant women would not be using birth control.

	Yes	No	Total
	144	70	214
%	67.2	32.8	100

National Rate 80% among married women
(Public Health Report,1983)

Pregnancy Planned	Yes	No	Total
	117	230	347
%	33.7	66.3	100
National Rate	70	30	100

(Public Health Report, 1983)

Some Prenatal Care During Pregnancy	Yes	No	Total
	238	19	257
%	92.2	7.8	100
National Rate	98.5	1.5	100

Number of Prenatal Care Visits	11+	6-10	0-5	Total
	152	74	25	351
%	71.5	21.4	7.1	100

National Rate No Comparable Figure

Table 1 (cont.)

OUTCOME MEASURES

Trimester that Prenatal Care Began	First	Second	Third	Total
	59	40	8	107
%	44.9	37.4	7.5	100
National Rate	76.1	18.5	3.9	100

Negative Pregnancy Outcome	Negative	Normal	Total
	28	222	250
%	11.2	88.8	100
National Rate	No comparable measure		

Low Birth Weight	Yes	No	Total
	21	226	247
%	8.5	91.5	100
National Rate	6.8	93.2	100

Stillbirth	Yes	No	Total
	7	245	252
%	2.8	97.2	100
National Rate	.9	99.1	100

(Statistical Abstract of the U.S.)

Birth Defects	Yes	No	Total
	3	244	247
%	1.2	98.8	100
National Rate	No comparable measure		

Breast Feeding Mother	Yes	No	Total
	86	164	250
%	21.5	78.5	100

National Rate Figures range from 45% (Public Health Reports) to 62% (Surgeon General's Workshop, 18)

Table 1 (cont.)

OUTCOME MEASURES

Preventive Child Health Care

	0	1	Most	Total
	5	33	157	195
%	2.6	16.9	80.5	100

National Rate No Comparable Measure

Visit for Child in First Six Weeks

	No	Yes	Total
	8	215	233
%	3.6	96.4	100

National Rate No Comparable Measure

Child Has Shots

We asked the general question, "Does (child's name) have his/her shots?" We included children over three months of age in this analysis and thus "shots" could mean any number of immunizations.

	No	Yes	Total
	37	159	196
%	18.9	81.1	100
National Rate	No Comparable Measure		
Tennessee Rate 1983	43	57	100

Socio-Economic Measures

Our survey also assessed five socio-economic characteristics of the women we interviewed. These characteristics and their frequencies are reported in Table 2.

Table 2

SOCIO-ECONOMIC MEASURES

Monthly Household Income	$0-250	251-500	500-750	751+	Total
	96	100	48	91	335
%	28.7	29.9	14.3	27.2	100

Education in Grades	9 or less	10 or 11	12 and more	Total
	77	87	174	336
%	22.8	25.7	51.5	100

Smoking	Yes	No	Total
	133	208	341
%	39.0	61.0	100

Age	14-19	20-29	30+	Total
	101	212	34	347
%	29.6	61.5	9.0	100

Racial Minority	Black	White	Total
	103	238	341
%	30.2	69.8	100

Intermediate Measures

As we have discussed already, we constructed a set of measures which we suspected might be related to both our Outcome Measures and our Socio-Economic Measures. These measures might offer use a better understanding of how poverty impacts on prenatal care, pregnancy outcome and child health practices. We organized these intermediate measures into three groups: Resources, Information, and Access.

Table 3

INTERMEDIATE MEASURES OF RESOURCES

Economic Stress	Least	1	2	3	4	Most	Total
	72	70	67	55	42	25	331
%	21.8	21.1	20.2	16.6	12.7	7.6	100

Component of the Economic Stress Measure

Is there sufficient funds to pay bills on time?

	Always	Usually	Sometimes	Never	Total
	83	83	75	92	333
%	24.9	24.9	22.5	27.6	100

Are there times when you have no food?

	No	Yes, Sometimes	Yes, Often	Total
	212	91	39	342
%	62.0	26.6	11.4	100

Support Network

Women indicated whether they felt they could turn to other people for help at five times of need such as during pregnancy or the illness of a child.

	Least	1	2	3	Most	Total
	2	16	54	92	64	228
%	0.9	7.0	23.7	40.4	28.1	100

Nature of Support

Women indicated whether they would look to people within or outside their family for help in time of need.

	Most Family Oriented	2	3	Least Family Oriented	Total
	67	33	6	2	108
%	62.0	30.8	5.4	1.8	100

Table 3 (cont.)

INTERMEDIATE MEASURES OF RESOURCES

Nonemployment Income Source

We categorized the women we interviewed by the number of their nonemployment income sources.

	0	1	2	Total
	158	146	31	335
%	47.2	43.6	9.3	100

Female Headed Household

We were not able to ascertain single, female headed households and so we combined households in which the respondent reported her mother, 28 cases, or herself, 53 cases, as the head.

	Yes	No	Total
	81	269	350
%	23.1	72.9	100

Table 4

INTERMEDIATE MEASURES OF INFORMATION

Knowledge of Birth Control	Yes	No	Total
	308	40	348
%	88.5	11.5	100

Birth Control Methods Used	Pill	Other	Sterilization	Total
	92	34	39	155
%	56.6	20.2	23.2	100

Source of Information

We determined if women relied on family members or people outside of their family for information on prenatal conditions, child feeding, child care and birth control and combined these responses.

	Most Family Oriented	2	3	Least Family Oriented	Total
	11	35	44	7	97
%	11.3	36.2	45.2	7.1	100

Table 4 (cont.)

INTERMEDIATE MEASURES OF INFORMATION

Opinion of Breast Milk Compared with Formula

	Breast Milk Better	The Same	Formula is Better	Total
	141	64	35	240
%	58.8	27.2	14.0	100

Knowledge of Prenatal Conditions

We combined responses to two sets of questions. The first set of ten questions required the respondent to distinguish five serious prenatal conditions from five normal prenatal conditions. The second scale was the score of serious prenatal conditions which the women recognized.

	0-4	5-6	7-8	9-10	Total
	30	42	102	170	344
%	8.1	11.4	30.4	50.0	100

Knowledge of Serious Prenatal Conditions

	0-2	3-4	5	Total
	83	150	116	349
%	22.8	43.9	33.2	100

The final set of intermediate measures were those of access and were all single item measures.

Table 5

INTERMEDIATE MEASURES OF ACCESS

Transportation

	Yes	No	Sometimes	Total
	178	61	12	251
%	71.0	24.2	4.8	

Driving Distance to the Hospital of Delivery

	1hr or less	1 to 2 hrs	2 hrs or more	Total
	249	36	1	286
%	87.1	12.5	0.4	100

Table 5 (cont.)

INTERMEDIATE MEASURES OF ACCESS

Average Waiting Time to See Child's Health Care Provider

	1/2 hr or less	1/2 to 1 hr	1-2 hrs	2+ hrs	Total
	114	79	41	11	245
%	46.5	32.2	16.7	4.5	100

Satisfaction with Child's Health Care

	Yes	No	Total
	223	19	242
%	92.1	7.9	100

Form of Payment for Prenatal Care

This was asked only of women pregnant at the time of the interview.

	Free	Medicaid	Private Payment	Work Insurance	Total
	18	39	30	31	118
%	16.2	32.1	25.4	26.3	100

Medicaid or other Health Care Insurance

	Yes	No	Total
	209	135	344
%	60.8	39.2	100

SECTION 4 - COMMUNITY MEASURES

We designed our questionnaire to provide information about the health and development of infants in each of our six communities and about the prenatal and child care practices of women of childbearing age. This section will discuss our findings on a community basis. The next section will examine our findings at the individual level.

Community Context

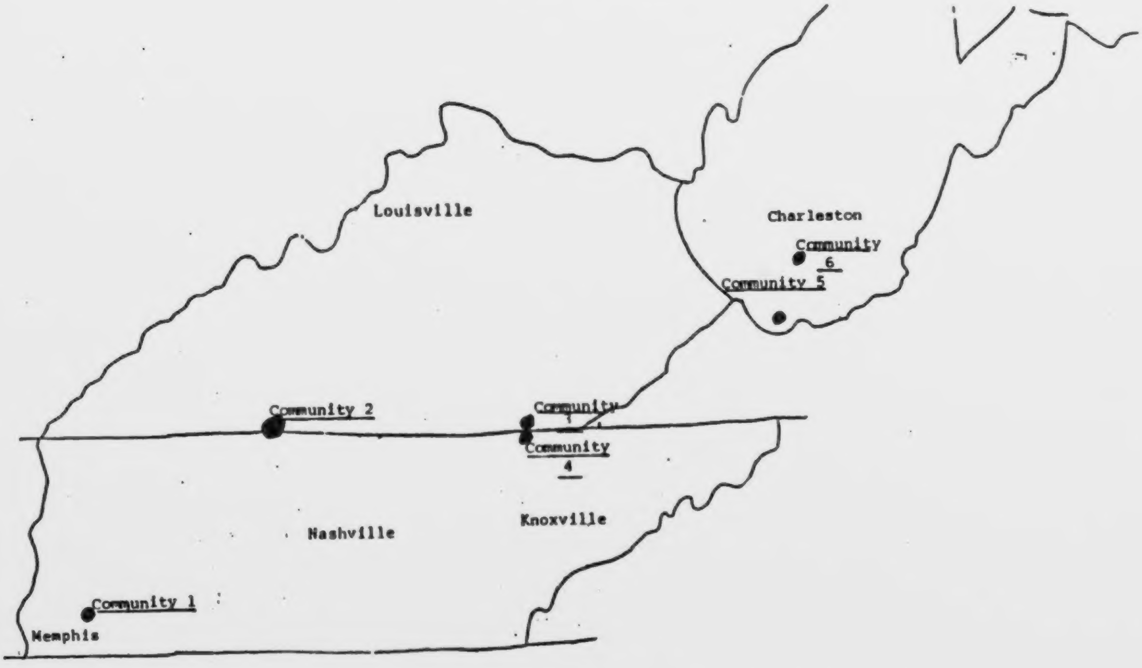
There are several differences among the six communities of our survey which are important background of the measures which our survey provides. These differences include varieties of economy, different proportions of racial minorities in the population and available health services. Moving from west to east, Community 1 is in West Tennessee and its population is predominately black. There is a community-operated clinic there from which the MIHOW staff person operates. The economy of Community 1 is predominately agricultural, large row crop farming, e.g. soybean and cotton, with some employment in manufacturing plants in the surrounding area. Community 2 is in Western Kentucky and has an economy similar to Community 1 although the farms are not as large and there is employment in manufacturing plants much closer by. Community 2 has a large black population although not a majority of black residents. Leaders in Community 2 are trying to establish health services locally. They have secured facilities through the loan of a trailer from the Tennessee Valley Authority but have had only limited success in securing the services of a physician. One physician came and established practice for a brief time before leaving. Nursing services are available through the clinic and are coordinated with the MIHOW work.

Communities 3 and 4 share many similarities. They adjoin each other although one is in Kentucky and the other is in Tennessee. Both are coalmining communities in the Appalachian portion of their states. Their local economies revolve about coal and they have been depressed for many years. Unemployment is very high, and rates of 10 and 15 percent are perennial. These rates understate the level of real unemployment because many people have given up looking for work and others never enter the labor force because of the lack of employment in the first place. These people are not counted as unemployed. Poverty is extensive and well-established in these two communities. Health care services are available to residents of Community 3 through local, private providers in the nearby county seat. A community clinic operated with limited hours and staffed by a nurse practitioner serves the MIHOW clients and other residents of Community 4.

Communities 5 and 6 are also coalmining communities and both of them are in West Virginia. The coal economy in these communities has suffered severe and recent decline. Community 5 reported unemployment of 95 percent at the time of our survey. Community 6 is less dependent on mines of the same company but had high unemployment also as a result of the decline of the coal industry. In contrast to Communities 3 and 4, these communities have a large number of people described in the media as new poor. That is, they are blue collar workers whose income and fringe benefits, including health care insurance, dropped rapidly and significantly because of unemployment. Both communities have a large number of black residents and both have community operated health clinics from which MIHOW staff members operate.

The following map provides the location of each of the communities.

Sites of MIHOW Communities



BEST COPY AVAILABLE

Socio-Economic Measures

The socio-economic measures taken from our survey indicate the very low incomes of the women MIHOW is intended to serve. Seventy-three percent of the women interviewed reported monthly household incomes of $750 or less and 58 percent of them reported incomes at or below $500. It is difficult to match these figures with the federal guidelines for poverty or state guidelines for Aid for Dependent Children because the number of people in the household is a factor in these guidelines. We will use the state and federal income guidelines for a family of four which was about $12,000 or $1,000 a month at the time of our survey. Ninety-two of the women we interviewed, or 27 percent, reported household incomes at or above $750 a month. In our analysis we will use the household income of $750 as a rough demarcation of families living in poverty according to the federal guidelines. That measure sets off about 73 percent of our respondents as having lower incomes than the federal poverty guideline.

It is much more difficult to compare our respondents' income with state standards for AFDC because the standards vary from state to state. The income standard of AFDC eligibility in Tennessee is $406 a month, up from $217 a month which was the standard when our survey was taken and which had not been adjusted since 1969. The income standard in West Virginia was $332 a month; and in Kentucky it was $235 a month. Approximately 59 percent of the women in our survey reported household incomes of $500 a month or less and about 29 percent of all the women reported household incomes at or below $250 a month. This last category has an income ceiling which exceeds the payment standard to a family of four in each of the three states involved in our study. AFDC monthly payments at the time of our survey for a family of four in West Virginia were $249; in Kentucky, $235; and in Tennessee, $154 (Children's Defense Fund). Legislation in Tennessee was proposed to raise the standard to $203 but failed to pass in the legislature in 1985. A compromise of $171 monthly payment for a family of four was passed.

Despite the various standards of the states and the inexact dollar amount from our survey some conclusions seem obvious. Our respondents, on the whole, have very low incomes, and government measures of relief are stringent in their criteria and exceedingly modest in amount.

In addition to these measures on income, our survey includes other measures of education, age, smoking and race that may have an impact on family planning, prenatal care, the outcome of pregnancies, child health and child care. These measures are reported for each community by percentages in Table 6.

Table 6

SOCIO-ECONOMIC MEASURES BY COMMUNITY IN PERCENTAGES

	% of Total	COMMUNITIES 1	2	3	4	5	6	p-value of x2
Monthly Household income (N=335)								.000
$0 -250	28.7	22.2	10.7	44.8	44.6	29.1	19.6	
251-500	29.9	11.1	23.2	37.9	39.3	23.6	42.9	
501-750	14.3	25.9	12.5	10.3	8.9	16.4	12.5	
751+	27.2	40.8	53.6	6.8	7.2	30.9	25.1	
Education in grades (N=338)								.000
9 or less	22.8	13.5	16.1	29.3	33.9	18.5	24.1	
10 or 11	25.7	17.3	10.7	44.8	30.4	24.1	27.6	
12 or more	51.5	69.2	73.2	25.9	35.7	57.4	48.3	
Average	10.9	11.1	11.5	11.3	10.6	11.1	10.9	
Smoking (N=341)								.001
Smoker	39.0	15.5	30.5	47.5	51.8	36.5	36.8	
Non-smoker	61.0	84.5	69.5	52.5	48.2	63.5	63.2	
Age (N=341)								—
14-19	29.6	30.4	18.6	23.3	39.3	37.3	37.9	
20-29	61.5	62.5	67.8	65.0	53.6	61.8	55.2	
30+	9.0	7.1	13.6	11.7	7.1	10.9	6.9	
Average	23.9	24.1	25.1	24.4	22.6	24.4	23.1	
Racial Minority (N=341)								.000
Black	30.2	70.7	33.9	0.0	3.5	46.4	26.9	
White	69.8	29.3	66.1	100.0	96.5	53.6	73.1	

In addition to the differences of income among these communities, we have pointed out that Communities 3, 4, 5 and 6 are coalmining communities. Communities 5 and 6 experienced very severe economic slumps beginning in about 1980, and unemployment in both communities reached very high levels. Consequently, the layoffs in the mines meant less income and, after a year's time, no job related health insurance. Communities 5 and 6 differ from Communities 3 and 4 by the union membership of its work force. Miners in Communities 5 and 6 are members of the United Mineworkers of America while miners of Communites 3 and 4 are not.

Communities 3 and 4 are coal mining communities which witnessed drastic economic decline much earlier. The poverty in these areas is well known and well established. Consequently, Communities 5 and 6 represent more "new poor" than "old poor." There are more blue collar workers unemployed and faced with drastic reductions of income and benefits such as medical insurance in Communities 5 and 6 than in Communities 3 and 4. These latter communities represent the almost stereotypical hardship of Appalachian poverty well dramatized and written in print media.

There are differences among our communities in terms of educational attainment which also distinguish between the chronically depressed Appalachian communities, 3 and 4; the coalmining communities which witnessed recent economic decline, 5 and 6; and the more rural communities with a combination of agricultural and small scale manufacturing, Communities 1 and 2. Communities 3 and 4 have the largest percentages of respondents who had not obtained 12 grades of education or more, 74 and 64 percent respectively. In Communities 5 and 6 these percentages drop to 43 and 52 respectively. In Communities 1 and 2, 31 percent and 27 percent of our respondents indicated 12 grades of education or more.

Almost 23 percent of our respondents indicated an education of nine grades or less. On the other hand, 52 percent indicated a complete high school education or more. The average educational attainment of our respondents was slightly less than 11th grade.

Thirty-nine percent of our respondents indicated that they smoked either daily or weekly. The pattern of smoking varies significantly among our communities. Once again, the chronically depressed Appalachian communities, 3 and 4; the other Appalachian communities, 5 and 6; and the rural, non-mining areas varied in a pattern similar to variations on other measures. About half of the women in Communities 3 and 4 reported smoking; about one-third of the women in Communities 5 and 6; and smaller proportions in Communities 1 and 2. When we rank the communities on these measures from worst (1) to best (6), we find they rank very much the same on all three measures - income, education and smoking.

Table 7

PROBLEM SOCIO-ECONOMIC MEASURES BY COMMUNITY IN RANK

	COMMUNITY						
	1	2	3	4	5	6	p-value of x2
Lowest Monthly Household Income	5	6	2	1	4	3	.001
Lowest Percent of High School Graduates	5	6	1	2	4	3	
Highest Percentage of Smokers	6	5	2	1	3	4	.001

Our communities are racially very different and the composition of our respondents reflects that. In Community 1, 71% of our respondents are black. Community 3 is an entirely white community and Community 4 is almost entirely white. In Community 5, almost half of our respondents are black and in Communities 2 and 6 the percentage of black respondents more approximates the average of our total sample which is 30%.

It is important to note that all the communities where MIHOW is working are areas of severe poverty and need. The measures of poverty among the women of even our "best well-off" community sample far exceed national figures as we demonstrated.

Outcome Measures

The survey data also permit us to measure several of the variables in which we hope to promote improvement. These are the outcome measures of prenatal care, negative pregnancy outcomes, breast feeding and preventive child health care. Table 8 reports on these Outcome Measures and family planning.

A minority of the women we interviewed practice family planning effectively and breast feeding is also a distinct minority practice. Respondents in our communities indicated that approximately 34 percent of their last pregnancies were planned. This was less than half of the national figure. The number of reported unplanned pregnancies ranged from a high of 44 percent in Community 3 to a low of 26 percent in Community 4. This measure is far lower than the percentage of women who report using birth control. The contrast of these measures suggests that birth control is not used regularly or effectively. These two measures also indicate the possibility of increasing birth control use and substantial room for increasing the percentage of planned pregnancies.

The pattern of prenatal care varied among the communities with some communities exceeding the national average and others falling far below. In general, the women reported higher levels of no prenatal care and beginning prenatal care late. Ninety-three percent of the respondents to our survey reported having some prenatal care. This ranged from a low of 83 percent in Community 3 to a high of 100 percent in Communities 2 and 4. The differences among our communities on these responses was statistically significant. Likewise, the number of prenatal care visits varied among the communities in a statistically significant fashion. Three of four Appalachian communities had respondents who reported having five or less prenatal care visits in excess of the 10 percent of our total sample. There was wide variation on reports of the trimester of the first prenatal care visit. Communities 1 and 5 had about 90 percent of the respondents reporting a first prenatal visit in the first trimester. On the other hand, Communities 2 and 4 had the highest percentage of respondents reporting their first prenatal care visit in the third trimester, 12.5 percent and 9.5 percent respectively. These variations are not related to the presence of a primary care clinic in the community. Community 2 with the best measures had no care or irregular care at the time of our survey. Communities 1, 5 and 6 with far worse measures of prenatal care all had primary care clinics in the community.

The rates of breast feeding are low. Only thirty-four percent of the women with children reported breast feeding the most recently born child. Nationally, figures on breast feeding vary from 62 percent of women reporting breast feeding at least in the hospital to 45 percent reporting breast feeding their infants. The differences among women in the six communities who reported breast feeding their youngest child was statistically significant. It ranged from highs of 50% or more in Communities 2 and 6 to a low of 10% in Community 5. Especially significant was the low percentage of women reporting breast feeding their children in the communities with large black populations.

Table 8

OUTCOME MEASURES BY COMMUNITY IN PERCENTAGES

		COMMUNITY						
	% of Total	1	2	3	4	5	6	p-value of x2
Birth Control Used (N=214)	67.8	75.6	56.1	75.0	68.8	67.9	63.9	—
National Rate	80% among married women (Public Health Report,1983)							
Latest Pregnancy Planned (N=341)	33.7	30.9	35.0	44.1	26.3	31.6	33.9	—
National Rate	70 percent (Public Health Report, 1983)							
Had Prenatal Care (N=257)	92.6	90.2	100.0	83.3	100.0	89.7	92.5	.05
National Rate	98.5							
Number of Prenatal Care Visits (N=251)								.05
11+	60.6	62.7	76.1	61.5	36.8	63.2	59.0	
6-10	29.5	29.4	19.6	20.5	52.6	23.7	33.3	
5 or less	10.0	7.8	4.3	17.9	10.5	13.2	7.7	
National Rate	No Comparable Figure							
Trimester of First Visit (N=107)								—
First	55.1							
Second	37.4			Data Not Available				
Third	7.5							
National Rate	76.1, 18.5 and 3.9 percent.							
Negative Pregnancy Outcomes (N=245)	10.6	18.8	15.2	4.9	5.9	2.7	12.8	.099
National Rate	No comparable measure							
Low Weight Births (N=238)	7.9	10.9	10.9	4.9	5.9	2.7	10.5	—
National Rate	6.8							

Table 8 (cont.)

OUTCOME MEASURES BY COMMUNITY IN PERCENTAGES

		COMMUNITY						
	% of Total	1	2	3	4	5	6	p-value of x2
Stillbirth (N=245)	2.8	8.2	2.2	0.0	0.0	2.7	2.6	—
National Rate	.9	(Statistical Abstract of the U.S.)						
Birth Defects (N=245)	1.2	0.0	6.7	0.0	0.0	0.0	0.0	.02
Breast Feeding Mothers (N=250)	34.4	21.3	55.3	30.2	38.2	10.3	50.0	.001
National Rate	Figures range from 45 percent (Public Health Reports) to 62 percent (Surgeon General's Workshop, 18).							
Preventive Child Health Care (N=184)	80.5	90.2	97.6	65.8	81.5	76.7	52.9	.000
	16.9	9.8	2.4	28.9	18.5	13.3	47.1	
	2.6	0.0	0.0	5.3	0.0	10.0	0.0	
Child Has No Shots (N=185)	18.9	9.5	2.4	31.6	18.5	23.3	47.1	.000
National Rate	No comparable measure. 1983 figure for Tennessee was 37 percent.							
No Exam in First Six Weeks (N=250)	3.6	0.0	0.0	7.9	0.0	12.1	3.1	.05

The birth defects reported among the women we interviewed all occurred in Community 2 and include Down's Syndrome, hypospadia and a deformed foot bone. This finding is surprising because the other problem outcome measures for Community 2 generally falls at or below the average of our survey. The women who conducted the survey in Community 2 recalled a rash of negative pregnancy outcomes, three Down's Syndrome children, in a short span of time and among women who lived in a specific geographic area. They suspected some environmental factor caused those birth defects and consequently Community 2's much higher brith defect rate. In general, surveyors in each community offered anecdotal evidence of far more birth defects, 12, than we accepted for purposes of this analysis.

The rates of negative pregnancy outcomes among the women of our survey were higher than national rates provided by the March of Dimes. This suggests a greater risk for problem pregnancies among the women MIHOW is intended to serve. While the women in our survey, reported birth weights of less that 2500 grams or about 5 lbs, 8 oz. in 7.9 percent of their births, the national figure was 6.8 percent. Also, while the national rate of birth defects, including low birth weights, was 7 percent in 1982, the women in our sample reported birth defects and low birth weights at a rate of 9.5 percent.

The distinct economic pattern of the communities coincides with the statistically significant differences among the communities on Preventive Child Health Care. Communities 5 and 6 reported higher percentages of children without shots and no exams in the first six weeks. These are also the communities that had recent economic declines in income and unemployment. They are indicative of the new poor. Communities 3 and 4, where poverty is too familiar, had better scores on Preventive Child Health Care. This may indicate that programs for low income populations are better established, known and/or utilized among low income groups like those in Communities 3 and 4 than among the new poor as in Communities 5 and 6.

When we rank the communities by these measures of outcomes and arrange them in a problem orientation, there are far fewer patterns than we found when we examined the Socio-Economic Measures. Table 9 reports the ranks of the communities on each of our Outcome Measures. There is, of course, some consistency among measures used to constitute a composite measure such as Preventive Child Health Care. But there is no striking consistency of rank among the measures such as we found among income, education and smoking for example.

Table 9

PROBLEM OUTCOME MEASURES BY COMMUNITY AND RANK

	COMMUNITY						
	1	2	3	4	5	6	p-value of x2
Birth Control Not Used	6	4	5	1	2	2	—
Latest Pregnancy Not Planned	2	5	6	1	3	4	—
No Prenatal Care	3	5	1	5	2	5	.05
Few Prenatal Care Visits	4	6	1	2	2	5	.05
Late Prenatal Care							
Negative Pregnancy Outcome	1	2	4	5	6	2	.099
Low Weight Births	1	5	2	3	6	5	—
Stillbirth	3	6	5	1	4	2	—
Birth Defects	2	1	2	2	2	2	.02
Non-Breast Feeding Mothers	2	6	3	4	1	5	.001
Preventive Child Health Care	5	6	3	4	2	1	.001
Child Does Not Have Shots	5	6	3	4	2	1	.001
No Exam in First Six Weeks	4	6	3	5	2	1	.05

Intermediate Measures

In addition to our Socio-Economic Measures we have several related or Intermediary Measures to relate to the socio-economic characteristics of the women we surveyed and to our Outcome Measures. There are important variations among our communities on the Intermediate Measures of Resources. If we take the three most economically stressful categories as a cutoff point, we find 36 percent of our sample in those categories. These are the women who reported insufficient funds to pay their bills or to provide food at least sometimes. Communities 1 and 2 have far smaller percentages in those categories while the remaining categories have many more respondents in those categories. Once again Communities 3 and 4 report the largest percentage in these combined categories, 44 percent and 62 percent respectively. Communities 5 and 6, communities of the new poor, report 44 and 36 percent of their respondents in these categories. The two questions which were combined to form the Economic Stress measure show statistically significant variation among the communities.

The measure of Nonemployment Income Sources provides a less clear differentiation among the communities. Again, this is in part due to the high unemployment in Communities 5 and 6 related to the closing of mines which occurred about the time of the survey. Communities 5 and 6 report lower percentages of households with only employment sources of income than the other communities. By the same token, their responses indicate that at the time of the survey they had the highest percentages of households dependent on nonemployment sources of income. These sources would include unemployment compensation which is the primary explanation for the response pattern on this item.

Communities 2 and 3 report the smallest proportion of female headed households. The total percent in our sample is 22.7 percent with a low in Community 3 of 10 percent and a high in Community 5 of 32.7 percent.

The Intermediate Measures of Resources vary in patterns that are clear and relate to other patterns. Communities 1 and 2, for example, report the largest percent of respondents with the highest income category and the lowest percent of respondents reporting high Economic Stress. All four Appalachian communities have higher rates of reported Support Networks. That network is also much more exclusively family in the Appalachian communities. Communities 5 and 6 have the highest rates of reported Nonemployment Income Sources as we might expect because of the high rates of recent unemployment there. On the other hand Communities 1 and 2 have the highest rates of solely employment income sources. Female Headed Households are reported in much lower rates in Communities 2 and 3 which shared no pattern on previous measures. The rates of community responses on Intermediate Measures of Resources are given in Table 10.

Table 10

INTERMEDIATE MEASURES OF RESOURCES BY COMMUNITY IN PERCENTAGES

		COMMUNITY						
	% of Total	1	2	3	4	5	6	p-value of x2
Economic Stress (N=331)								.000
Least	21.8	23.1	19.5	13.6	10.9	16.7	23.6	
	21.1	26.9	46.3	22.0	12.7	20.8	18.2	
	20.2	32.7	26.8	20.3	14.5	18.8	21.8	
	16.6	9.6	7.3	25.4	12.7	16.7	18.2	
	12.7	1.9	0.0	13.6	36.4	12.5	9.1	
Most	7.6	5.8	0.0	5.1	12.7	14.6	9.1	
Insufficient funds to pay bills (N=338)	27.6	7.7	6.8	34.5	48.2	40.4	28.6	.001
Insufficient food (N=342)	11.4	17.9	0.0	6.8	19.3	17.0	8.9	.001
Support Network (N=228)								.125
Least	0.9	2.2	0.0	0.0	0.0	3.0	0.0	
	7.0	0.0	7.3	13.9	12.5	3.0	8.1	
	23.7	24.4	26.8	36.1	15.6	21.2	18.9	
	40.4	57.8	46.3	19.4	37.5	33.3	35.1	
Most	28.1	15.6	19.5	30.6	34.4	39.4	37.8	
Family as Support Network (N=108)								—
Family Only	62.0	46.7	38.1	71.6	84.6	72.2	65.0	
Other	38.0	53.7	61.9	29.4	15.4	27.8	35.0	

Table 10 (cont.)

INTERMEDIATE MEASURES OF RESOURCES BY COMMUNITY IN PERCENTAGES

		COMMUNITY						
	% of Total	1	2	3	4	5	6	p-value of x2
Nonemployment Income Sources (N=335)								.000
None	47.2	68.1	81.0	48.3	26.8	27.8	36.2	
	43.6	27.7	15.5	46.6	64.3	57.4	46.6	
Most	9.3	4.3	3.4	5.2	8.9	14.9	17.2	
Female Headed Households (N=326)	23.1	25.9	13.6	10.0	30.4	32.7	29.3	.02

The women of our six communities had a statistically significant variation on reported knowledge of birth control and other Intermediate Measures of Information. Community 3 reported the lowest proportion 80 percent, while Communities 1 and 4 both reported 95 percent of the women had knowledge of birth control. The percentage of all respondents reporting knowledge of birth control was 88.5 percent. The women of the different communities varied in a statistically significant manner on their opinion that breast feeding is better than formula. Communities 1 and 5, which have the largest proportion of black residents of the six communities, reported the opinion that formula was more healthy than breast milk, 31 percent and 44 percent respectively. Approximately 59 percent of the total sample reported the opinion that breast milk is better than formula. The women of Community 1 had the largest percentage of respondents with the least knowledge about prenatal conditions and the least ability to distinguish serious prenatal conditions from normal conditions. Communities 5 and 6 also had large percentages reporting in the lower categories of knowledge about prenatal conditions. Fifty percent of our sample was able to correctly establish eight or more prenatal conditions as being serious or normal. Only 33 percent of our sample was able to identify all five serious prenatal conditions as serious. Communities 1 and 6 had the smallest percentage of respondents with this ability while Community 4 had 55 percent of its respondents capable of making this distinction.

Our Intermediate Measures of Information do not appear to have a relation to each other. Communities with high rates of Reported Knowledge of Birth Control rank lower than other communities on Knowledge of Prenatal Conditions. Community 4, with the lowest income of the communities and the second highest percent of women without high school education, reported the highest percentage of respondents with the most knowledge on prenatal conditions. Table 11 reports the rates of response to Intermediate Measures of Information.

Table 11

INTERMEDIATE MEASURES OF INFORMATION BY COMMUNITY IN PERCENTAGES

		COMMUNITY						
	% of Total	1	2	3	4	5	6	p-value of x2
Reported Knowledge of Birth Control (N=348)	88.5	94.7	93.3	79.7	94.6	80.7	88.1	.01
Birth Control Method (N=155)								.07
Pill	59.4	67.6	36.4	61.5	77.3	71.4	42.3	
Other	17.4	11.8	31.8	7.7	9.1	14.3	34.6	
Sterilization	23.2	20.6	31.8	30.8	13.6	14.3	23.1	
Family as Source of Information (N=97)								.075
Family Only	47.4	40.0	19.1	60.0	60.0	78.5	47.4	
on Birth Control (N=260)								.158
Family	24.2	37.8	20.0	22.2	30.0	20.7	12.8	
on Child Care (N=164)								—
Family	93.3	92.6	93.1	92.0	100.0	92.3	90.0	
on Child Feeding (N=185)								.08
Family	34.8	38.2	14.7	27.3	40.0	50.0	38.7	

Table 11 (cont.)

INTERMEDIATE MEASURES OF INFORMATION BY COMMUNITY IN PERCENTAGES

		COMMUNITY						
	% of Total	1	2	3	4	5	6	p-value of x2
Opinion that Breast Milk is Better than Formula (N=251)	58.8	31.3	76.7	83.8	61.8	44.1	56.4	.001
Knowledge of Pre-Natal Conditions (N=341)								.002
Least	8.1	21.1	5.2	1.7	5.4	9.4	10.7	
	11.4	21.1	6.9	13.3	3.6	17.0	12.5	
	30.4	24.6	36.2	30.0	19.6	30.2	39.3	
Most	50.0	33.3	51.7	55.5	71.4	43.4	37.5	
Knowledge of Serious Prenatal Conditions (N=345)								.000
Least	22.8	39.7	20.3	23.3	8.9	21.8	29.8	
	43.9	46.6	39.0	46.7	35.7	40.0	52.6	
Most	33.2	13.8	40.7	30.0	55.4	38.2	17.5	

Our Intermediate Measures of Access show significant differences from community to community but once again there is no clear pattern to the variations. This is understandable given the diversity of measures. Some measures are indictative of important problems at present in some communities and emerging in others such as access to obstetric care. Community 5 reported 38 percent of its respondents had to travel one or more hours to a hospital for delivery. People in this community have to drive past other hospitals which no longer offer obstetric services. This is indicative of a growing decline of obstetric services at rural hospitals. Far fewer respondents in any of the other communities reported this. Since our survey Community 5 has acquired obstetric services but women in Community 4 have lost the services they had and have to travel further to acquire them. Obviously, access to obstetric services in rural areas is a changing pattern.

A key factor in access is the ability to pay for health care. The two items related to payment for health care show parallel patterns of response. Communities 5 and 6 have the highest response of work-related health insurance while Communities 3 and 4 have the lowest. This is related to the economy of the communities. Communities 5 and 6 are union, coalmining communities and 3 and 4 have fewer miners with fewer benefits.

Paradoxically, Community 4 has the largest number of people reporting the lowest income and the largest percent of respondents reporting paying for prenatal care out of pocket and the least amount of Medicaid and insurance coverage for other health care. Table 12 relates community responses on Intermediate Measures of Access.

Table 12

INTERMEDIATE MEASURES OF ACCESS BY COMMUNITY IN PERCENTAGES

		COMMUNITY						
	% of Total	1	2	3	4	5	6	p-value of x2
Transportation Available (N=251)	70.9	77.6	78.7	72.1	58.8	63.2	70.6	.01
Driving Distance of More than One Hour to Hospital of Delivery (N=286)	12.9	3.7	8.3	12.0	16.3	37.8	2.2	.001
Use of Prenatal Vitamins (N=330)	82.4	85.7	88.9	70.2	83.6	87.7	78.4	.001
Average Wait to See Child's Health Provider (N=246)								.000
1/2 Hour	46.5	44.9	82.6	30.2	38.2	32.4	43.6	
1/2 to 1 Hour	32.2	26.5	8.7	44.2	41.2	47.1	33.3	
1 to 2 Hours	16.7	20.4	6.5	20.9	8.8	20.6	23.1	
2 or More Hours	4.5	8.2	2.2	4.7	11.8	0.0	0.0	
Dissatisfaction with Child's Health Care (N=242)	7.9	4.1	2.2	18.6	8.8	9.1	5.4	.07

Table 12 (cont.)

INTERMEDIATE MEASURES OF ACCESS BY COMMUNITY IN PERCENTAGES

	% of Total	COMMUNITY 1	2	3	4	5	6	p-value of x2
Prenatal Care Payment (N=118)								.02
Free/Medicaid	48.3	50.0	44.4	70.0	54.2	30.0	41.7	
Out of Pocket	25.4	16.7	27.8	20.0	41.7	30.0	12.5	
Work Insurance	26.3	33.3	27.8	10.0	4.2	40.0	45.8	
Medicaid or Other Insurance (N=244)	60.8	66.7	67.8	53.4	41.8	61.4	72.4	.01

Conclusion

The differences which we found among the communities on our several measures are instructive for an intervention. They underscore that an intervention must take into account already available services; patterns of utilization of those services; community attitudes, practices and opinions; and the local economy. However, these measures are much more effective as guidelines for an intervention if they are applied to the individual. We have extrapolated from community figures to establish some relationships among our measures. We will now move to examining correlations among individual responses and measures. By this we hope to acquire more information about the problems we are addressing and a clearer sense of how to intervene.

SECTION 5 - INDIVIDUAL MEASURES

The discussion of our survey findings thus far has established a baseline measure of maternal and infant health and behavior and identified some interrelationships of the measures we are using based upon a comparison of the communities in which we are working. These interrelationships of community measures can only suggest the interrelationships of measures which we may find at the individual level.

The purpose of this section is to relate our findings of individual responses and measures. We have combined all the women of our sample, regardless of community, to treat them as a group of women from low income households. We are interested in the interrelationship of family planning, prenatal care, pregnancy outcomes, breast feeding, and child health care with each other and with the other measures and information the women of our sample provided us.

This information is important in designing an effective intervention which local residents, with some preparation, can provide for local women and children. Consequently, we are interested primarily in the intermediary measures with which our intervention is most likely to deal. We will relate our Intermediate Measures of Resources, Access and Information to both our set of Socio-Economic Measures and our Outcome Measures. The first set of interrelationships may offer us insight into the impact of income, education and age on other characteristics of the households with which we are dealing. The second set of interrelations, those of our Intermediate Measures and our Outcome Measures, may offer us insight into how the intermediate consequences of income, education and age impact on the measures of maternal and infant health which we hope to improve. We are, of course, also interested in the interrelationship of our Socio-Economic Measures and Outcome Measures and we will examine them.

Outcome Measures

Our Outcome Measures seem unrelated. There are of course correlations among similar measures and component measures such as Negative Pregnancy Outcome and its constituent measures Low Birth Weight and Stillbirths. However, measures of family planning, pregnancy outcomes, breast feeding and preventive child health care show no pattern or relationship among the responses we acquired.

The important exception among the relations of our Outcome Measures is the relation between our measures of prenatal care and preventive child health care. Women who reported receiving prenatal care also reported more Preventive Child Health Care. Likewise, women who reported more prenatal care visits also reported significantly higher levels of Preventive Child Health Care. These associations are related in Table 13. The component tables relating individual significant associations reported in Table 13 are appended. In this table as in all the tables of this section a measure is included only if it has at least one significant correlation with another measure. If a measure is not listed, it had no significant association with any other measure.

Table 13

X2 CORRELATIONS OF OUTCOME MEASURES

	Preventive Child Health Care (N=184)	Child Has Shots (N=185)	Visit in First 6 Weeks (N=250)
Prenatal Care (N=257)	y	y	(ns)
# of Prenatal Care Visits (N=251)	xx	—ns	xxx

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

Socio-Economic Measures

When we compare our Socio-Economic Measures with each other, we find some frequent and significant correlations. Monthly Household Income and Education, for example, are directly and significantly related. One-third of the women in the households with $250 or less of monthly income reported educational attainment of high school or more while twice as many or two-thirds of the women in households with $1,000 or more monthly income reported high school education or more. Likewise, Smoking and Monthly Household Income are clearly and directly related as women in the lower household income categories reported a higher degree of smoking, almost 50 percent in the lowest category, compared to 25 percent in the highest category. On another measure, Age younger women reported less income although the relation of Age and Monthly Household Income did not reach statistical significance. Black respondents reported household incomes that were not significantly different from white respondents. Blacks were slightly underrepresented in the bottom two categories of income and slightly over-represented in the two top income categories.

Education is related very strongly not only to income but to every other measure. Fifty-eight percent of the women with 9 grades of education or less reported smoking compared with only 27 percent of the women who had completed high school education. The significant relationship between Education and Age is a consequence of younger women reporting less educational attainment. This is merely because many of them are still in the process of completing their education and does not indicate a decrease in educational attainment among younger women as the numbers would indicate. Our black respondents reported educational attainment of high school or more in much larger proportion than our white respondents. While blacks make up only 30 percent of our sample, they constitute 44 percent of the women reporting high school education or more.

Reported smoking behavior is clearly related to both Monthly Household Income and Education as we have already indicated. Smoking is also related to Age among the women of our survey. Younger women and older women reported smoking in larger percentages than women in their 20s. Smoking is significantly related to race among our respondents. Only one out of four black respondents smoked while two out of five white respondents smoked.

The examination of these Socio-Economic Measures indicate a problematic relationship among them. Specifically, low educational attainment correlates significantly with higher percentages on Smoking and low Monthly Household Income. Race is not significantly related to income or education in a negative manner in our sample but on the other hand it relates significantly with less smoking and more education among blacks. The cross tabulation results of these measures are given in Table 14 and some component tables are appended.

Table 14

X2 CORRELATIONS OF SOCIO-ECONOMIC MEASURES

	Monthly Household Income (N=335)	Education (N=338)	Smoking (N=341)	Age (N=345)	Racial Minority (N=341)
Monthly Household Income (N=335)	*	xxx	—y	y	ns
Education (N=338)	xxx	*	—xxx	xxx	xxx
Smoking (N=341)	—y	—xxx	*	(y)	—xxx
Age (N=345)	y	xxx	(y)	*	(ns)
Racial Minority (N=341)	ns	xxx	—xxx	(ns)	*

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

Socio-Economic and Outcome Measures Compared

When we compare our Socio-Economic Measures and Outcome Measures, we find that race is most consistently associated with problem pregnancy outcomes in a direct and significant manner. More than half of the Negative Pregnancy Outcomes, 13 of 24, occurred to the third of our sample which is black. One half of the Low Birth Weights and 5 of 6 of our Stillbirths occurred among the black women of our sample. In spite of no difference in their reported income compared with the white women of our sample.

The differences in our sample on breast feeding seem clearly related to class as well as race. Only 24 percent of the black women of our sample reported breast feeding compared with 38 percent of the white women. But breast feeding among our black respondents appears to be something which a woman does when she does not have financial resources to do otherwise. Breast feeding increases among the women in the total sample as their income and education increases. Although the black women who report higher educational attainment and no difference from whites in terms of income still report significantly lower rates of breast feeding. This suggests that white women seem to have overcome a lower class bias against breast feeding as a practice of poverty sooner or in larger numbers than the black women of our survey.

In addition to this class-related explanation there are other reasons which the women, blacks and whites, gave for not breast feeding. They included the inconvenience of going to work or going to school and breast feeding. Some reported not breast feeding on the advice of a doctor or relatives. Many more doubted the adequacy of the supply of their milk or its quality. A few reported husbands or relatives preferring that they not breast feed and several indicted they thought breast feeding was inconvenient, messy or embarassing compared with bottle feeding.

Younger women reported more unplanned pregnancies, 78 percent of the 14-19 year old portion of our sample compared to 50 percent of women over 30. Younger mothers and women did not score significantly lower than older women on our other Outcome Measures.

There is a clear relationship between Smoking and Low Birth Weight. Thirteen of 20 reported Low Birth Weights occurred among the two-fifths of the sample who reported smoking. Likewise 14, more than half, of the 27 reported Negative Pregnancy Outcomes occurred among the 40 percent of the women who reported smoking.

Educational attainment is related to some of our Outcome Measures as well. Breast Feeding, for example, clearly increases with Education. Forty-five percent of our respondents reporting high school or more education breast fed their most recent child compared to 32 percent in the next category and 20 percent in the category with ninth grade or less educational attainment. Similarly, those reporting high school education or above reported higher percentages of children with shots, 81 percent compared with 66 and 69 percent in the other two categories. In addition, 81 percent of women reporting high school education also had the highest combined score on the measure of Preventive Child Health Care compared to 67 percent and 72 percent of the other two categories. On the other hand, the relationship of Education to other Outcome Measures such as Negative Pregnancy Outcomes is unclear.

In general, our measure of Monthly Household Income relates to our Outcome Measures most consistently and in a manner comparable to Education. That is, women with more income reported significantly more Prenatal Care, more Breast Feeding and more Preventive Child Health Care. And, as with Education, we found no statistical difference among reports of Negative Pregnancy Outcomes among these low-income women reporting different incomes.

Table 15 reports the cross tablulations of our measures of Socio-Economic and Outcome Measures. The appendix contains component tables of Table 15.

Table 15

X2 CORRELATIONS OF SOCIO-ECONOMIC MEASURES AND OUTCOME MEASURES

	Monthly Household Income (N=335)	Education (N=338)	Smoking (N=341)	Age (N=345)	Racial Minority (N=341)
Latest Pregnancy Planned (N=347)	y	—ns	*	xx	ns
# of Prenatal Care Visits (N=251)	x	y	—ns	—ns	(ns)
Negative Pregnancy Outcome (N=245)	(ns)	(ns)	—ns	ns	x
Low Weight (N=238)	—ns	(ns)	x	—ns	y
Stillbirth (N=245)	—ns	ns	(ns)	(ns)	x
Breast Feeding (N=240)	x	xx	—ns	ns	—x
Preventive Child Health Care (N=184)	x	xx	—x	(ns)	ns
Child Has Shots (N=185)	xx	xx	—ns	ns	ns

Table 15 (Cont.)

X2 CORRELATIONS OF SOCIO-ECONOMIC MEASURES AND OUTCOME MEASURES

	Monthly Household Income (N=335)	Education (N=338)	Smoking (N=341)	Age (N=345)	Racial Minority (N=341)
Exam in First 6 Weeks (N=250)	—ns	y	—xx	(ns)	ns

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

These correlations imply some goals for an intervention such as MIHOW. Clearly, this information suggests trying to reduce smoking among women in order to increase normal birth weight deliveries; working with younger women to increase family planning; working with women with low educational attainment and low household incomes to increase utilization of prenatal care for themselves and preventive health care for their infants; and encouraging these same women to breast feed their children. Black women in particular, within the communities we are serving, are obviously reluctant to breast feed.

As helpful as the knowledge of these associations is in planning interventions, we can plan better interventions if we understand more specifically the manner in which these measures may impact on the outcomes for which MIHOW is working. Thus, we extracted from our survey items conceptually related to those Socio-Economic Measures and our Outcome Measures but which provided more room for intervention and change. These latter measures we called Intermediate Measures. We created three subsets of Intermediate Measures - Resources, Information, and Access.

Intermediate Measures - Resources

The relationships of our Socio-Economic Measures of Monthly Household Income, Education and Smoking with our Intermediate Measure of Resources are strong. We devised a measure of Economic Stress by combining responses to two questions dealing with insufficiency of funds to pay bills and the insufficiency of funds to provide for food at all times. This measure of Economic Stress correlates in a direct way and at a significant level with Monthly Household Income, Education and Smoking. That is to say, women reporting lowest Monthly Household Income and the lowest educational attainment report higher Economic Stress than other women. Likewise, increases in Economic

Stress are associated with increases in Smoking although at less significant levels.

We also constructed a measure of Nonemployment Income Sources. Our respondents indicated the various sources of income coming to the households. We coded these and combined them. The measure indicates the number of sources of income, both employment and nonemployment. We found that women with the lowest household incomes reported the greatest dependence on nonemployment sources.

Women who reported themselves or their mothers as the head of household constitute respondents in the Female Headed Household category. One-half of them are black, although only 30 percent of our sample is black. There are many more female headed households in the lower household incomes. This is consistent with findings from national census data and is symptomatic of the feminization of poverty and the increasing feminization of the low end of the wage spectrum. Age was also related to the measure of dependence on nonemployment income with older women reporting less such dependence. This offers some hope that the economic position of women, including those who are heads of households, improves with age. However, it does leave a combination of problems of inadequate funds and dependence on nonemployment income in the early years of childbearing. The significant relation of Education and Female Headed Household is due to the much larger percentage of women reporting 10 and 11 grades of education also reporting being in a Female Headed Household. Thirty-three percent of these women reported being in Female Headed Households compared with 18 percent of the women in each of the other two educational categories. Our data does not permit us to separate women living alone and women living in households headed by their mothers. The direct and significant relationship between Education and Female Headed Household, then, may be spurious and due to more young women who live with their mothers and who reported lower levels of educational attainment because they have not finished school

We were also interested to know the amount of personal support women had within the community. We combined responses to questions dealing with help that they have in specific matters to construct a measure of the strength of their support network. We were also interested to know whether this support came from family members or from people outside the family. These measures, while not statistically significant, indicate that women in the lower Monthly Household Income categories report lower amounts of support, and the amount of support steadily increases until the highest Monthly Household Income category where people report having a decline in the occasions in which they turn to other people for help.

There is a clear pattern to the nature of support. All our respondents indicated a heavy reliance on family members for help and support. But 86 percent of the women in our lowest Monthly Household Income category reported exclusive reliance on family members compared to 50 to 61 percent of the women in the other Monthly Household Income categories.

The pattern of these associations indicates that our Intermediate Measures of Resources are related to Monthly Household Income and/or Education in an important way. Our Intermediate Measures of Resources seem to be proxies for a combination of Monthly Household Income and Education. The relationships of our Intermediate Measures of Resources and our Socio-Economic Measures suggest factors related to poverty, exclusive of age and race, with which to compare maternal behavior, pregnancy outcomes and child care. Table 16 indicates the set of relations among the Socio-Economic Measures and our Intermediate Measures of Resources.

Table 16

X2 CORRELATIONS OF SOCIO-ECONOMIC MEASURES AND INTERMEDIATE MEASURES - RESOURCES

	Monthly Household Income (N=335)	Education (N=338)	Smoking (N=341)	Racial Minority (N=341)
Economic Stress (N=331)	—xxx	—xx	—x	(ns)
Insufficient Funds to Pay Bills (N=338)	—xxx	—y	—x	(ns)
Insufficient Food (N=342)	—xxx	—xx	—x	ns
Support Network (N=228)	(y)	(ns)	—ns	ns
Family as Support Network (N=108)	—y	—ns	—ns	ns
Nonemployment Income Sources (N=335)	—xxx	—y	xxx	(ns)
Female Headed Household (N=330)	—xxx	(xx)	ns	xxx

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

The question of importance is: Are our Intermediate Measures of Resources and our other Intermediate Measures associated with the Outcome Measures of our survey? If they are and if it is clear how they are related, this information would suggest appropriate means and targets of intervention. Table 17, which relates the results of the cross tabulations of the Intermediate Measures of Resources, indicates that Economic Stress, which was strongly associated with both Education and Monthly Household Income, is more strongly associated with Low Birth Weight than either Monthly Household Income or Education were. Likewise, Economic Stress is more strongly associated with Prenatal Care and Number of Prenatal Care Visits than were either income or education. These measures of prenatal care were also directly associated with Support Network in a significant manner.

Economic Stress is not as strongly associated with Preventive Child Health Care as was Monthly Household Income and Education although another Intermediate Measure of Resources is consistently and strongly related to Preventive Child Health Care. Seventy-eight percent of the children in our survey reported not to have had shots were in households with one or more Nonemployment Income Sources which comprise 48 percent of our sample. All eight children without a visit to the physician in the first six weeks of life were reported in the same two categories of income sources. When combined, these measures indicated that 91 percent of the children in households with only employment sources of income scored the highest on the Preventive Child Health Care item. Sixty-eight percent of the children in households with one source of nonemployment income scored highest on the Preventive Child Health Care item and 69 percent of the children in households with two nonemployment sources of income scored highest on that measure.

This clear association of a decline in Preventive Child Health Care with increased Nonemployment Income Sources corroborates our findings at the community level. Communities 5 and 6 had consistently high scores on both measures. This strongly suggests that the decline in household income and medical benefits brought about by unemployment has a consequence of less well child care.

Preventive Child Health Care and its component measures are also related to our measure of Female Headed Households. Sixty-eight percent of the children in Female Headed Households had the highest score of Preventive Child Health Care compared to 84 percent of the children in other households.

Other Outcome Measures are less strongly related to the Intermediate Measures of Resources but are of some importance. Birth Control Use, for example, was reported in smaller percentages by women who reported one or two on Nonemployment Income Sources and residing in Female Headed Households. Likewise, the percentage of women who reported using birth control increased from 53 percent in the least amount of Support Network to 79 percent in the category of highest Support Network. Likewise, women who reported that their last pregnancy was not planned reported more reliance on family members for support, more Nonemployment Income Sources and greater frequency of living in a household with a female head. Age, that is the youth of a woman, may be the factor underlying these associations.

Breast Feeding was associated in a statistically significant manner with responses related to Insufficient Food, Nonemployment Sources of Income and Female Headed Households. Breast Feeding reports declined among women responding that there is insufficient food for the household at times as well as among women indicating one or more sources of nonemployment income. Women who responded that they or their mothers were the heads of households also breast fed in a statistically significant smaller percentage than other women.

The reports on Support Networks are related to reports on Prenatal Care and Number of Prenatal Care Visits in a similar manner. As the degree of Support Network increases so does the rate of response of having prenatal care or larger numbers of visits until the category of highest Support Network in which the reported percentages on these other measures decline.

Table 17

X2 CORRELATIONS OF OUTCOME MEASURES AND INTERMEDIATE MEASURES - RESOURCES

	Birth Control Use (N=214)	Latest Pregnancy Planned (N=347)	Prenatal Care (N=257)	# of Prenatal Care Visits (N=251)	Negative Pregnancy Outcome (N=245)
Economic Stress (N=331)	—ns	—ns	—y	—xx	y
Insufficient funds to pay bills (N=338)	—ns	—y	—ns	—ns	ns
Insufficient food (N=342)	—y	—ns	—xx	—xxx	ns
Support Network (N=228)	y	ns	xx	x	(ns)

Table 17 (cont.)

X2 CORRELATIONS OF OUTCOME MEASURES AND INTERMEDIATE MEASURES - RESOURCES

	Birth Control Use (N=214)	Latest Pregnancy Planned (N=347)	Prenatal Care (N=257)	# of Prenatal Care Visits (N=251)	Negative Pregnancy Outcome (N=245)
Family as Support Network (N=108)	—ns	—x	—ns	—ns	ns
Nonemployment Income Sources (N=335)	—y	—x	ns	—y	ns
Female Headed Household (N=350)	—y	-xxx	ns	—y	ns

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

Table 17 (cont.)

OUTCOME MEASURES AND INTERMEDIATE MEASURES - RESOURCES

	Breast Feeding (N=240)	Preventive Child Health Care (N=184)	Child Has Shots (N=185)	Exam in First 6 Weeks (N=250)
Economic Stress (N=331)	—ns	—y	—x	—x
Insufficient funds to pay bills (N=338)	—ns	—y	—x	—y
Insufficient food (N=342)	—xx	—ns	—ns	(ns)

Table 17 (cont.)

OUTCOME MEASURES AND INTERMEDIATE MEASURES - RESOURCES

	Breast Feeding (N=240)	Preventive Child Health Care (N=184)	Child Has Shots (N=185)	Exam in First 6 Weeks (N=250)
Support Network (N=228)	(ns)	—y	(ns)	(ns)
Family as Support Network (N=108)	—x	—ns	—ns	—ns
Nonemployment Income Sources (N=335)	—y	—xxx	—xxx	—xx
Female Headed Household (N=350)	—x	—x	—x	—ns

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

Intermediate Measures - Information

The associations between our Socio-Economic Measures and our Intermediate Measures of Information differ from the associations between Socio-Economic Measures and Intermediate Measures of Income. Whereas Monthly Household Income, Education and Smoking had strong and consistent associations with our Intermediate Measures of Income, Age and Race have the strongest and most consistent associations with our Intermediate Measures of Information.

Race is strongly related to three Intermediate Measures of Information. White respondents indicated a better opinion of breast milk, more Knowledge of Prenatal Conditions and more Knowledge of Serious Prenatal Conditions than black women.

Age is another Socio-Economic Measure consistently related to our Intermediate Measures of Information. Older women in our survey indicated knowledge of birth control with far greater frequency than younger women. The older women in our survey also differed from the younger women in terms of birth control methods used. Older women indicated higher frequencies of sterilization while the pill was reported as the birth control method used far more frequently by younger women. Age was also associated with Knowledge of Prenatal Conditions and Serious Prenatal Conditions in a significant manner. Women in the older Age categories had more knowledge of both sets of conditions.

Monthly Household Income is related to Sources of Information which, like our Nature of Support Network measure, indicates whether information on birth control, child care, and child feeding comes primarily from within the family or outside the family. The lower the Monthly Household Income category the more the women depended upon information from within the family. This pattern of dependence on the family for information is similar to the pattern of dependence on the family for support. The association of low Monthly Household Income and a low opinion of breast milk is not statistically significant but is clearly in the direction of women in low income households holding a lower opinion of breast milk. Likewise, women in households with low monthly incomes reported less knowledge of serious prenatal conditions than women in households with more income.

Education was similarly related to only a few of the Intermediate Measures of Information. Women with lower educational attainment indicated less Knowledge of Birth Control than women with higher educational attainment. Likewise, women with lower educational attainment indicated less Knowledge of Prenatal Conditions than women with more education in a statistically significant manner. The relationship between Education and the Knowledge of Serious Prenatal Conditions was moderate in the direction of more education and more knowledge although it did not achieve statistical significance.

Women with higher educational attainment held a better opinion of breast milk than formula but not in a statistically significant manner. This is probably because black women who have high school education and above reported low opinions of breast milk in statistically significant proportions.

Table 18 reports the cross tabulation results of our Socio-Economic Measures and Intermediate Measures of Information.

Table 18

X2 CORRELATIONS OF SOCIO-ECONOMIC MEASURES AND INTERMEDIATE MEASURES - INFORMATION

	Monthly Household Income (N=335)	Education (N=338)	Age (N=345)	Racial Minority (N=341)
Birth Control Knowledge (N=348)	ns	x	y	ns
Birth Control Method (N=155)	ns	(ns)	(xx)	(ns)
Family as Source Of Information (N=97)	—x	—ns	—x	ns
Good Opinion of Breast Milk (N=251)	y	ns	—ns	—xxx
Knowledge of Prenatal Conditions (N=344)	ns	x	xx	—xxx
Knowledge of Serious Prenatal Conditions (N=349)	y	ns	xx	—xx

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

The associations among the Outcome Measures and our Intermediate Measures of Information are not consistent as we would expect. Many of the measures are not conceptually related. For example, we would not expect Birth Control Knowledge to be directly linked to pregnancy outcomes or Preventive Child Health Care. However, even those measures which have conceptual links such as Negative Pregnancy Outcome and Knowledge of Prenatal Conditions or Knowledge of Serious Prenatal Conditions submeasures do not appear to be related as we might expect.

Birth Control Use was significantly related to both Birth Control Knowledge and Birth Control Methods. The pattern of responses to these questions indicates problems of interpretation in administering the questionnaire and perhaps an incomplete level of family planning among some of the women surveyed and the lack of rigor in birth control practice in some instances. Two women, for example, reported no knowledge of birth control but reported using it. Recall, also, that we found no correlation between Birth Control Use and Latest Pregnancy Planned. In other words, women responding that they practice birth control may not always do so in such a fashion to prevent an unwanted pregnancy. Likewise, some women may have reported knowledge of birth control who have none or inadequate knowledge to permit effective birth control practice. On the other hand, anecdotal information indicates that males object to some forms of birth control devices or to brith control. We did not ask questions about the attitudes or male sex partners which may have a great bearing on a woman's practice of birth control regardless of her knowledge.

Preventive Child Health Care and its component measures are related to both Knowledge of Prenatal Conditions and Knowledge of Serious Prenatal Conditions. However, there is no implication of causality in this association which most likely indicates a more general level of education and information. Our measure of Education is directly and significantly related to Knowledge of Prenatal Conditions and Preventive Child Health Care.

Breast Feeding is related to several Intermediate Measures of Information. Women who reported greater reliance on family members for information in general and information on child feeding in particular reported smaller percentages of women breast feeding their youngest child than women who reported more diversity in information sources. The opinion that breast milk is better than formula was strongly associated with women who reported breast feeding.

In general, women who reported greater reliance on family members for information reported lower scores on desired outcomes including not only Breast Feeding but Birth Control Use and Latest Pregnancy Planned.

Table 19 reports the cross tabulations of Outcome Measures and Intermediate Measures of Information.

Table 19

X2 CORRELATIONS OF OUTCOME MEASURES AND INTERMEDIATE MEASURES - INFORMATION

	Birth Control Use (N=214)	Latest Pregnancy Planned (N=347)	Prenatal Care (N=257)	Breast Feeding (N=240)	Preventive Child Health Care (N=184)	Child Has Shots (N=185)	Visit in First 6 Weeks (N=250)
Birth Control Knowledge (N=348)	xx	x	ns	ns	ns	ns	(ns)
Family as Information Source (N=97)	—ns	—ns	—ns	—x	—x	—x	(ns)
Good Opinion of Breast Milk (N=251)	na	na	ns	xxx	(ns)	ns	(ns)
Knowledge of Prenatal Conditions (N=344)	ns	ns	xxx	ns	ns	ns	ns
Knowledge of Serious Prenatal Conditions (N=349)	ns	ns	xx	ns	ns	ns	ns

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

Intermediate Measures - Access

A third subset of intermediate measures deals with access to health care. These measures, like our Intermediate Measures of Resources, show direct and strong relationships with the Socio-Economic Measures of Monthly Household Income and Education. The availability of transportation was significantly related to Monthly Household Income and Education in a direct manner, for example. Income and Education were also related to the average wait to see the child's health provider with women with low Monthly Household Income and less Education reporting longer waits.

Monthly Household Income and Education were also both related to the Form of Payment for Prenatal Health Care reported by the women in our survey. The pattern of Monthly Household Income and form of payment is as expected with women with higher Monthly Household

Incomes reporting more reliance on private payment and/or insurance and women with less Monthly Household Income relying more on Medicaid or free care. However, it is important to note that 27 of the 114 pregnant women in our survey who were at or below our proxy for the federal poverty income level, $750 a month, reported paying privately or not paying at all for their prenatal health care.

These responses are consistent with the Medicaid gap. That is, women in the very lowest Monthly Household Income categories reported Medicaid coverage for prenatal health care and/or free care, and women in categories closer but still below the federal guidelines of poverty indicated more private payment or the inability to pay for prenatal care. This pattern is caused by the financial guidelines for eligibility for Medicaid programs which are established at the state level. In general, these financial guidelines are far lower than federal poverty income levels as noted earlier. Tennessee's eligibility criterion was $300 a month at the time of the survey, West Virgnina's $332 and Kentucky's $235. Women in households with incomes above these levels have difficulty in acquiring Medicaid coverage. Even women in the low Monthly Household Income categories have problems in acquiring Medicaid coverage if their husbands are present in the home. Only 17 of the 27 pregnant women in our very lowest Monthly Household Income category of $250 per month reported using Medicaid to pay for prenatal care.

This Medicaid gap extends to other forms of health care in addition to prenatal care. This gap is evident when we compare Monthly Household Income with Medicaid or Other Insurance. One hundred and twenty of the 329 respondents to these questions indicated that their households are at or below $750 a month income but they also report neither Medicaid nor other health insurance. Similarly, examining the respondents who indicated that they have Medicaid or insurance we find that the percentage of respondents with Medicaid or insurance is higher in the lowest and highest Monthly Household Income categories than in the middle two. This once again indicates that people below the federal poverty guideline but above the stringent state financial criteria for eligibility for Medicaid fall into a gap in health care coverages. In addition, this gap extends to the very poor. Thirty-two of the 94 women in the very lowest Monthly Household Income category, $250 or less per month, reported no Medicaid or Other Insurance.

The association of the measures of Education and Form of Payment for Prenatal Health Care follows a similar pattern to the Monthly Household Income measure. Women with lower reported educational attainment reported relying more on free prenatal care or Medicaid. On the other hand, 9 of the 18 women reporting free prenatal care had high school education or above. A combination of responses on these two tables suggests that women in lower income households with higher educational attainment are better able to avail themselves of programs for the reimbursement or provision for prenatal care than women with less education.

The associations between Age and Intermediate Measures of Access are probably explained by the associations between Age and both Monthly Household Income and Education which we have already discussed, younger women report lower Monthly Household Incomes. The relationships are in the same direction, that is, younger women have less transportation available as do low income women. Younger women also report a pattern of payment for prenatal health care similiar to those in low income households and with lower educational attainment. Age is also associated with driving distance to the hospital delivery. The only apparent explanatory significance of this is the anecdotal evidence that we have of the lack of mobility of low income women. As financial resources increase, obviously with age, women move to houses which are better in terms of access in general and proximity to family members in particular.

Race is statistically significant with only one measure of access and that is Medicaid or Other Insurance. Blacks report more Medicaid eligibility and/or insurance coverage than whites. This was true for the reports on the payment for prenatal care among blacks and whites as well. Part of the explanation of this association is the higher percentage of Female Headed Household among the black women. That is to say, low income, female headed households are more likely to be eligibile for Medicaid than other houiseholds.

Table 20 reports the cross tabulation findings of our Socio-Economic Measures and our Intermediate Measures of Access.

Table 20

X2 CORRELATIONS OF SOCIO-ECONOMIC MEASURES AND INTERMEDIATE MEASURES - ACCESS

	Monthly Household Income (N=335)	Education (N=338)	Age (N=345)	Racial Minority (N=341)
Transportation (N=251)	xxx	xx	x	—ns
Driving Distance	(ns)	—x	—x	(ns)
Average Wait To See Child's Health Provider (N=246)	—x	—xx	—ns	(ns)
Satisfaction With Child's Health Care (N=242)	y	ns	(ns)	(ns)
Form of Payment for Prenatal Health Care (N=118)	—xxx	—xxx	—xx	(y)
Medicaid or Other Insurance (N=244)	(xx)	ns	(ns)	x

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

Despite the strong and consistent relationships among the Socio-Economic Measures and the Intermediate Measures of Access, only one Outcome Measure, Preventive Child Health Care, is related to any of the Intermediate Measures of Access. There is a clear relationship between Transportation and Preventive Child Health Care. The availability of transportation is strongly and directly associated with higher scores on the Preventive Child Health Care item. This in turn is influenced by the strength of the relation between available transportation and reports that children have had their shots. Eighty-seven percent of the children of women reporting available transportation reported their children had shots, while only 60 percent of women reporting no available transportation reported their children had shots.

It is notable that several Intermediate Measures of Access did not correlate with Outcome Measures. For example, women with Medicaid or other forms of reimbursement for health care costs did not differ significantly from those without them on measures of Negative Pregnancy Outcomes and Preventive Child Health Care. Likewise, women reported no significant difference in Preventive Child Health Care despite differences among them in their average wait to see the child's health provider and their level of satisfaction with the care their child received.

Table 21 reports on the cross tablulations of our Outcome Measures and the Intermediate Measure of Access.

Table 21

X2 CORRELATIONS OF OUTCOME MEASURES AND INTERMEDIATE MEASURES - ACCESS

	Preventive Child Health Care (N=184)	Child Has Shots (N=185)	Visit in First 6 Weeks (N=250)
ACCESS			
Transportation (N=251)	xxx	xxx	(ns)

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

Our Intermediate Measures of Resources, Information and Access offer us pathways to examine how Socio-Economic Measures, especially Monthly Household Income, Education and Age, impact on family planning, prenatal care, pregnancy outcomes, breast feeding and the provision of health care for children. We have examined these pathways by analyzing the relationship of our Intermediate Measures with both our Socio-Economic Measures and our Outcome Measures. However, our Intermediate Measures themselves may be interrelated in a manner which may offer additional insights into means with which to improve our Outcome Measures.

Intermediate Measures Compared

Our Intermediate Measures of Resources have several interrelationships. For example, the associations we found between Female Headed Households and problem Outcome Measures are explained, at least in part, by the strong association between Female Headed Households and our measures of Economic Stress and Nonemployment Income Sources all of which are also related to problem Outcome Measures. Economic Stress and Nonemployment Income Sources are significantly and directly associated with each other and with other Intermediate Measures of Resources. These associations suggest that Economic Stress is related not only to dependence on nonemployment income sources but support networks limited primarily to family members. The interrelationships of Intermediate Measures of Resources are given in Table 22.

Table 22

X2 CORRELATIONS OF INTERMEDIATE MEASURES - RESOURCES

	Economic Stress (N=331)	Support Network (N=228)	Family as Support Network (N=108)	Nonemployment Income Sources (N=335)	Female Headed Household (N=350)
Economic Stress (N=331)	*	(ns)	y	xx	xx
Insufficient funds to pay bills (N=338)	xx	ns	y	xxx	xx
Insufficient funds for food (N=342)	xxx	ns	ns	ns	ns
Support Network (N=228)	y	*	(ns)	ns	ns
Family as Support Network (N=108)	y	(ns)	*	xx	ns

Table 22 (cont.)

X2 CORRELATIONS OF INTERMEDIATE MEASURES - RESOURCES

	Economic Stress (N=331)	Support Network (N=228)	Family as Support Network (N=108)	Nonemployment Income Sources (N=335)	Female Headed Household (N=350)
Nonemployment Income Sources (N=335)	xx	y	xx	*	xxx
Female Headed Household (N=350)	xx	ns	ns	xxx	*

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

An examination of the relationships of our Intermediate Measures of Resources and Information indicates that Nonemployment Income Sources is most consistently associated with the Intermediate Measures of Information. It is clear that women reporting one or more sources of nonemployment income report higher reliance on family members for information than other women and have lower scores on Knowledge of Prenatal Conditions and Knowledge of Serious Prenatal Conditions. As might be expected, women who indicated dependence on family members for information also reported dependence on family members for a support network in a statistically significant manner. Other relations of these measures are equally clear. Women in Female Headed Households reported a lower opinion of breast milk compared to formula than women in other households. Women reporting higher levels of Economic Stress also reported larger percentages of no Knowledge of Birth Control and greater dependence on family members for this information. This increased reliance on family members at higher levels of Economic Stress is consistent with our other findings but it is obviously not an unambiguous relation. Women reporting the least Economic Stress also reported the highest dependence on family members for information on birth control, for example.

The measures of the cross tabulations of the Intermediate Measures of Resources and Information are given in Table 23, and component tables are appended.

Table 23

X2 CORRELATIONS OF INTERMEDIATE MEASURES - RESOURCES AND INFORMATION

	Economic Stress (N=331)	Support Network (N=228)	Family as Support Network (N=108)	Nonemployment Income Sources (N=335)	Female Headed Household (N=350)
INFORMATION					
Birth Control Knowledge (N=348)	—x	xx	ns	—x	(ns)
Family as Information Source (N=97)	(ns)	(ns)	xxx	x	ns
Good Opinion of Breast Milk (N=251)	—ns	(ns)	(ns)	—ns	—xx
Knowledge of Prenatal Conditions (N=344)	—ns	(ns)	—ns	xx	—ns
Knowledge of Serious Prenatal Conditions (N=349)	—ns	(ns)	—ns	y	—ns

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

Economic Stress is related to a number of Intermediate Measures of Access. For example, the lack of available transportation and high degrees of reported Economic Stress are related. Higher degrees of Economic Stress were also related positively to Waiting Periods to See the Child's Health Provider and negatively to Medicaid or Other Insurance. The reports on Support Networks are related directly to reports on Medicaid or Other Insurance. As the degree of Support Network increases so does the rate of response of having reimbursement or Medicaid until the category of highest Support Network in which the reported percentages decline.

Women who reported the greatest reliance on the family had higher percentages of lack of transportation except for two women who reported the least reliance on family for support and no available transportation. On the other hand, those women who reported sources of nonemployment income also reported higher rates of no available transportation and higher rates of Medicaid coverage and free prenatal care.

Table 24 indicates the measures of the cross tabulations of Intermediate Measures of Resources and Access.

Table 24

X2 CORRELATIONS OF INTERMEDIATE MEASURES - RESOURCES AND ACCESS

	Economic Stress (N=331)	Support Networks (N=228)	Family as Support Network (N=108)	Nonemployment Income Sources (N=335)	Female Headed Household (N=350)
ACCESS					
Transportation (N=251)	—xxx	—ns	—xxx	—xxx	—xxx
Average Wait To See Child's Health Provider (N=246)	—xxx	(ns)	ns	ns	y
Satisfaction With Child's Health Care (N=242)	—ns	ns	xx	(ns)	(ns)
Form of Payment for Prenatal Health Care (N=118)	—ns	(ns)	(x)	x	xx
Medicaid or Other Insurance (N=244)	—x	(y)	—ns	ns	xxx

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

The relationships among the Intermediate Measures of Information are largely due to some measures being components of other measures. There are some statistically significant relations such as those between women reporting no Birth Control Knowledge and low scores on Knowledge of Prenatal Conditions and Knowledge of Serious Prenatal

Conditions. Age and Education are likely intervening factors in these associations. The responses on Opinion of Breast Milk corresponded with Source of Information. Women with a low opinion of breast feeding compared with formula derived their information, and their information on child feeding specifically, from within the family. Women with a low opinion of breast milk also scored low on Knowledge of Prenatal Conditions.

Table 25 relates the cross tabulations measures of the Intermediate Measures of Information.

Table 25

X2 CORRELATIONS OF INTERMEDIATE MEASURES - INFORMATION

	Family as Information Source (N=97)	Good Opinion of Breast Milk (N=251)	Knowledge of Prenatal Conditions (N=344)	Knowledge of Serious Prenatal Conditions (N=349)
INFORMATION				
Birth Control Knowledge (N=348)	—ns	—ns	xx	xx
Family as Information Source (N=97)	*	—x	—ns	—ns
Good Opinion of Breast Milk (N=251)	—x	*	xxx	ns
Knowledge of Prenatal Conditions (N=344)	—ns	xxx	*	xxx

Table 25 (cont.)

X2 CORRELATIONS OF INTERMEDIATE MEASURES - INFORMATION

INFORMATION	Family as Information Source (N=97)	Good Opinion of Breast Milk (N=251)	Knowledge of Prenatal Conditions (N=344)	Knowledge of Serious Prenatal Conditions (N=349)
Knowledge of Serious Prenatal Conditions (N=349)	—ns	ns	xxx	*

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

None of the Intermediate Measures of Information and Access have a significant correlation.

The last set of measures we examined was the interrelationship of the Intermediate Measures of Access. Few of the interrelationships were significant, and many are not conceptually linked. The availablity of transportation was related to higher satisfaction with the child's health care provider and shorter waits to see the provider.

Table 26

X2 CORRELATIONS OF INTERMEDIATE MEASURES - ACCESS

ACCESS	Wait to See Child's Health Provider	Satisfaction With Child's Health Care
Transportation	—y	y

xxx=p-value .001 xx=p-value .01 x=p-value .05 y=p about .10 or less
ns=no significance —=negative variance ( )=indeterminate variance

SECTION 6 - DISCUSSION

The women we surveyed are very poor. Seventy-three percent reported monthly household incomes of less than $750 which approximates the federal poverty income level. Roughly half of the women qualify by their income for state programs of Aid to Families with Dependent Children and 29 percent of them have incomes of $250 a month or less. This is an amount equal to levels of AFDC support. Their poverty places them at higher risk for problem pregnancies and negative pregnancy outcomes.

The women whom we interviewed were chosen because they live in areas which the Maternal and Infant Health Outreach Worker Program serves and they represent, in part, the women whom the MIHOW Program will serve in hopes of promoting improved pregnancy outcomes. The women came from six rural areas in Tennessee, West Virginia and Kentucky. Two of the communities are in rural, farming areas of the mid-South and four of them are rural, nonfarming, coalmining areas in the Appalachian region.

The purpose of our survey was to establish the level of problems and practices and to permit us a measure by which we could tell if our intervention was effective. We developed measures on family planning, prenatal care, negative pregnancy outcomes, breast feeding and preventive child health care. When compared with women nationally, the women of our survey reported less family planning, less prenatal care, more negative pregnancy outcomes and less breast feeding.

In addition to establishing measures on the extent of problems and practices, we were interested in establishing and assessing other measures which might indicate how low incomes impact on maternal and child health and practices. Such measures would provide direction for effective interventions to improve maternal and child health and practices. Late prenatal care was the only problem outcome for which we found no significant association with other measures we used.

Socio-Economic Measures

Education is the foci around which other socio-economic characteristics cluster more so than income. Income increased and smoking decreased significantly with higher levels of educational attainment. Education was also significantly related to Age as one would expect because very young women are still completing their education and thus reported lower educational attainment.

We did find that lower incomes, even among low income women, were related to less planned pregnancies, less prenatal care, less breast feeding and less preventive child health care. We did not find that lower incomes were related to more Negative Pregnancy Outcomes which suggests a threshold of poverty's influence on these outcomes below which other factors become increasingly important.

The only Socio-Economic Measure that we used that did have a significant and direct association with Negative Pregnancy Outcomes was Racial Minority. Despite the fact that the black women of our survey had higher levels of education, lower rates of smoking and no difference in their income levels when compared with the white women of our survey, they had significantly more negative pregnancy outcomes, especially stillbirths and low weight births. This contradicts the expected direction of the association of our Socio-Economic Measures and Negative Pregnancy Outcomes. Of course, this may be due to sampling error or a lack of other appropriate or more sensitive measures of socio-economic characteristics. The significant finding that black women report less breast feeding is more certainly due to class and culture than physiology and hence more susceptible to an intervention of information and education.

Age and Education were related to some Outcome Measures. In some cases these correlations were stronger than the comparable correlations with income. For example, the age of a woman more than her income correlated with more planned pregnancies. Education more than income correlated with Preventive Child Health Care. More education and more age correlated with more planned pregnancies, more breast feeding and more preventive child health care. This suggests that among the low income women we surveyed youth and less education promote greater vulnerablity for negative outcomes.

Socio-Economic Correlates of Intermediate Measures

We examined other information which the women we surveyed provided us to acquire a more complete picture of the resources, information and forms of access to health care which might differentiate low income women. We hoped that this more complete picutre might suggest specific impacts of poverty on maternal and infant health and behavior.

Our Intermediate Measures of Resources and Access differentiate among low income women primarily because of their direct relation to measures of income and education. Our Intermediate Measures of Information were less associated with income and education than with the age and race of the women we interviewed. The younger women in our survey reported less knowledge about birth control and along with the black women of our survey reported less knowledge about prenatal conditions than the older or white women in our survey. Younger women, like those with less income, reported more reliance on family members for information.

This reliance on the family for information is similar to the reliance on the family for support among the same women. This pattern is important given the emphasis some place on support networks for health and breast feeding practice (Cobb; Alden). Women with high and low incomes reported less support than women in the two middle income categories. But the nature of the support differed. Women with the least income relied more exclusively on family members for support and for information than women with more income. This cluster of income, support and the nature of support explains the direct association we reported between Economic Stress and higher levels of Family as Support Network. In other words, although the family is the primary support of the very poor it does not function to provide additional and needed resources. Women with the lowest incomes among the poor, at least in our sample, either have lower levels of support or support from within a relatively material resourceless family.

Other Intermediate Measures which we used also differentiated among low income women. For example, we found that the lowest income women and the highest income women reported more Medicaid or other forms of reimbursement and third party payment for prenatal care and child health care. The middle two categories had significantly less coverage for these expenses. The women with lowest incomes also reported more Nonemployment Income Sources and Economic Stress. The latter two measures were strongly and directly related to each other. This suggests that while there is categorical assistance in health for the very poor, forms of income assistance are inadequate, in the experience of the women who receive them. This is very apparent in the experience of women in Female Headed Household who report more Nonemployment Income Sources, more Medicaid and other forms of third party payment for health care but more Economic Stress.

Transportation also differentiates among poor women and children. Women without Transportation reported significantly higher levels of dependence on family members for support and higher levels of Economic Stress. Women in female headed households and with nonemployment income sources reported a greater lack of transportation than other women.

These latter two measures, Female Headed Households and Nonemployment Income Sources, were strongly and directly associated with each other and both were associated with Economic Stress as we have seen. These associations probably reflect our preference to provide public assistance only in extentuating circumstances, a female headed household, and, even in those circumstances, to provide as little as possible and too little to assure transportation for rural women.

Outcome Correlates of Intermediate Measures

Not only do these measures differentiate among low income women, they also suggest how poverty impacts on the outcomes of our program. Economic Stress, for example, the report of insufficient funds to pay bills or provide food at all times, is directly and significantly related to our measure, Negative Pregnancy Outcome. Economic Stress correlated strongly with Monthly Household Income, Education, Smoking, Nonemployment Income Sources, Female Headed Households, Transportation and a lack of Medicaid coverage. These relations suggest the gordian knot which impacts on negative pregnancy outcomes among the poor.

In addition to our Economic Stress measure there are other income-related measures more strongly associated with Outcome Measures than income itself. For example, the source of income, as indicated by Nonemployment Income Sources had a stronger association with Preventive Child Health Care than income. Women reporting household incomes from employment had higher rates of Preventive Child Health Care than those who did not. Or another example, women in Female Headed Households reported a far greater proportion of unplanned pregnancies than women who were not and this association was much stronger than that of income and unplanned pregnancy.

One inference of the association of these income-related measures, our Intermediate Measures of Resources, is that the resources a woman can call upon are important to the outcomes we measured. This brings us to consider the support networks of the women we surveyed. Women reporting more support and diverse sources of support reported more prenatal care and slightly more Birth Control Use, Breast Feeding and Preventive Child Health Care.

Transportation had a significant and direct association with Preventive Child Health Care. Transportation seemed less of a problem in acquiring prenatal care or in terms of the number of prenatal care visits even those these latter measures were associated with later child health care practices. Transportation was strongly linked to other Intermediate Measures of Resources and again offers a perception of the interrelationship of characterics of the low income women of our survey which impacts on maternal and infant health.

New Resources for Improved Outcomes

These pattern of all these associations suggests that low income women could use additional resources. This of course is the conclusion which the women surveyed offered us when we asked them to name the problems facing the community. Time and again more more income and employment were the answers. Information they provided us on the survey suggests that AFDC payments might be increased and eligibilty requirements changed to incorporate children in two parent families with incomes which are higher though still below poverty levels in order to provide would additional resources. Likewise, liberalized Medicaid eligibilty criteria permitting children in very low income, two parent families to be enrolled seems to be a needed additional resource for the poor. These changes would mitigate the scandalously high rates of children in poverty income families without income or Medicaid assistance. They are more needed now in light of the reported increases of children in poverty income families and the increased number of children in female headed, one parent families.

A home visitor program is best designed in light of the need of low income women for additional resources. The most important function of such a program would be to increase the support system of low income woman and extend their support beyond the family with direct implications for some of our Outcome Measures such as family planning, prenatal care and breast feeding and indirect implications for other Outcome Measures. The specific function of the home visitor as resource would be to provide information and to advocate for new services or to create more access to existing services with and for low income women.

A home visitor intervention is between a rock and a hard place in several instances. It offers assistance to women with too few resources without increasing the number of resources and only at best increasing access to existing resources. It provides new and needed support which may conflict with existing forms of support within the family, especially in terms of information on birth control and child care. A home visitor intervention must be mindful of its limits and of existing support networks and especially the role of the family in providing information and support to women.

A home visitor program is a serious intervention in the traditional patterns of support and information regarding some of the most private and personal decisions in a woman's life including birth control use, breast feeding, and child care. The family plays an increased role in providing support to women who reported Economic Stress and Nonemployment Income Sources, these are the very women who reported the highest rates of negative outcomes. Consequently, an intervention to promote breast feeding, for example, must relate to the fact that women who do not breast feed are more likely to depend on their family for their information than other resources. This is probably the strongest argument for training local women who as neighbors, even if not family, can provide the intervention and provide a bridge between the family as a support network and additional information and resources to help young women manage resources and acquire resources to better cope with economic stress and other consequences of dependency on nonemployment income.

As important as who intervenes and how they do so is the question, what is the most effective intervention? There are some clear associations among our findings that offer explicit direction for a home visitor intervention in maternal and infant health. Certainly smoking should be discouraged. In terms of access it is clear that transportation is a formidable problem for women who need prenatal care and child health care. The provision of transportation is too timely a task for MIHOW workers themselves but assistants or volunteers might provide it. Also, some time spent to organize carpools or providing women of the community driving instructions might have a bearing on improved maternal and child health. Besides transportation there are other problems of access with which a home visitor program needs to contend. Specifically, many low income women within intact families and their children are without reimbursement mechanisms for health care. Consequently and paradoxically, many of the poorest women and children are private pay patients. But these specific interventions suggest the more general conclusion of this survey which is the need to supplement low income women, children and their families with additional resources.

Our findings also indicate the interplay of an individual woman's income, age and education in determining the resources she has, her level of information and its sources, and problems of access she may have. Among these any intervention must distinguish between factors it cannot hope to change from factors which it may change. Smoking would be an appropriate target for individual change because it is related to reported problem pregnancy outcomes and is more clearly an individual choice. But an intervention cannot hope to change the age, race, income or educational attainment of the participating women, on the other hand. We can work to prevent second unplanned pregnancies among young women. We can work to counteract the low opinion of breast milk among black women. We can work to provide all available resources to low income families. Likewise, we can provide specific information to women with few information resources regardless of educational attainment. Our survey provides us information about Intermediate Measures to guide our interventions related to these Socio-Economic Measures.

While our intervention cannot change income or education of the women participating in MIHOW it can address problems related to these characteristics and which are themselves related to problem outcomes and practices. An intervention based on our findings would aim at reducing stress in low income households. It could do this by adding to the support network of pregnant women and young mothers in providing an addition resource of support, information and access to related health care needs. Those women with special needs for additional support, according to our analysis, are young women whose education is incomplete or was ended before finishing high school and who reside in female headed households and/or in households with one or several nonemployment income sources. These latter two measures are strongly related to themselves and with Economic Stress among the women we surveyed.

This intervention might provide an additional, specific resource such as transportation but it would also need to be general in nature so as to assist women to manage better resources that are available to them. This is not to suggest that there are adequate resources. In many cases there are not adequate resources and the Economic Stress measure indicates that many low income women have too few resources to provide for themselves and for their children. Sometimes the lack of resources is obvious and other times it is less visible. For example, the women reporting high Economic Stress also reported less Medicaid coverage and health insurance. These women also reported more dependence on family members with few resources themselves for support.

A home visitor intervention needs to insure that available resources are utilized and that people who have fallen upon nonemployment income sources recently or for the first time are made aware of resources available to them especially for infant care. Thus an intervention such as MIHOW may either introduce women to resources which they do not have or have no knowledge of or assist women to manage resources which they have or which might be made available to them.

Early Evaluations

Early assessment of our program indicates that our interventions are making a positive difference for the clients of our program. Data on the first sixty women in our program indicate a lower rate of negative outcomes than among women in the baseline survey despite the fact that the MIHOW participants have less education, fewer planned pregnancies and are more frequently unmarried than the women in our survey. In other words, MIHOW participants would seem to be at higher risk than the women of our survey but have better outcomes. Table 27 indicates this comparison.

Table 27

PRENATAL CARE AND PREGNANCY OUTCOMES

COMPARISON OF MIHOW PARTICIPANTS
AND
WOMEN OF BASELINE SURVEY

	MIHOW Participants N=60	Baseline Survey N=350	p-value of X2
Pregnancy Planned	10.0	33.7	.001
More than High School Education	3.3	18.6	.01
Single Women	40.7	28.0	.05
No Prenatal Care	0.0	7.8	.05
Birth Defects	2.8	1.2	-
Low Birth Weights	7.9	8.5	-
Negative Pregnancy Outcomes	9.7	11.2	.10

Our intervention program also offers some evidence of improving child nutrition and parental-child relations. A comparison of MIHOW clients and women of our baseline survey indicates significantly more breast feeding, 50 percent compared with 34 percent, and less solid food in the diet of very young infants. Table 28 relates these measures.

Table 28

INFANT FEEDING PRACTICES

COMPARISON OF MIHOW CLIENTS
AND
WOMEN OF THE BASELINE SURVEY

	% of MIHOW Participants (N=60)	% of Baseline Survey (N=250)	p-value
Did Breast Feed	50.0	34.3	.02
No Solid Foods Before One Month	97.1	73.4	.002
No Solid Foods Before Four Months	54.2	34.5	—

Our baseline survey did not permit us a measure of child development, but subsequent work established a group with which to compare MIHOW participants on the Caldwell Home Inventory. Fifty-five women and children in the six communities of our work were tested. A comparison of their scores with women of the MIHOW program indicates the latter had significantly higher total scores. Table 29 compares the scores of the two groups.

Table 29

CALDWELL HOME INVENTORY SCORES
OF
MIHOW CLIENTS AND CONTROL GROUP

Scale	MIHOW Mean Score (N=27)	Control Group Mean Score (N=55)	p-value
Emotional and Verbal Responsiveness	10.04	8.96	.02
Acceptance of Child's Behavior	6.30	5.82	.11

Table 29 (cont.)

CALDWELL HOME INVENTORY SCORES OF MIHOW CLIENTS AND CONTROL GROUP

Scale	MIHOW Mean Score (N=27)	Control Group Mean Score (N=55)	p-value
Organization of Environment	4.67	4.70	—
Provision of Play Materials	6.48	6.42	—
Parental Involvement With Child	4.74	3.05	.0001
Opportunity for Variety	3.37	2.91	.13
Total	35.59	31.88	.01

These results are encouraging but they are preliminary. As the pregnancy outcomes and practices of more women in our program are recorded we will have additional evidence to judge the effectiveness of our intervention.

CONCLUSION

The American preference for the individual provision of basic needs has serious and harmful consequences for those people who depend on others to meet their basic needs. In many cases, this is of course justified. But higher levels of infant mortality, birth defects and negative pregnancy outcomes cannot be justified as a socially-chosen consequence of being poor. Yet recent evidence indicates that the children of women who are poor or who are black have higher risks of unfair starts in life because of their mothers' condition in life. This situation is all the more grave because children in poor families and in female single parent families are increasing in number and percent according to a study of the Congressional Research Service in May 1985, Children in Poverty.

Social Provision for Maternal and Infant Needs

We can deal with the risk these children run to the degree that it is not the poverty of the mother but the social provision for her needs which puts her and her child at risk. Eligibility for public assistance begins at incomes as low as $217 a month for a family of four in Tennessee and entails judgments about the merit or worth of the individual applying for assistance. Levels of assistance, among the women we surveyed, were not higher than $250 a month for a family of four at the time we conducted our survey. The inadequacy of this assistance is compunded by linking it to health care coverage, thus creating a gap in Medicaid coverage between the very poor and worthy who qualify for Aid for Dependent Children and those whose employment or income permits them to participate in other forms of health care insurance. In between are many people, including 1/3 of the women whom we interviewed, who are living in poverty and must use their few resources to purchase health care or refrain from using health care services. This left between 57 and 67 percent of the children in families with below poverty incomes without Medicaid assistance in the states of our survey at the time of our survey. Federal legislation is now prompting the states to enroll more poor children whose families fall under the stringent AFDC income eligibility standards but most poor children will continue to go without publicly funded health care services or publicly supported reimbursement.

This situation is a negative externality in economic terms, an unintended and unwanted consequence, of our economy and our social policies towards dependent populations. Simultaneous high unemployment rates and increased rates of poverty have accompanied the recent and radical reassertion of our preference for the individual provision of basic needs. This has meant that women who are not in the labor market are at higher risk of being poor. Even the women who do enter the labor market are likely to find low wage jobs which, if they are the head of a household are likely to increase their income above the thresholds of public assistance, but not above the poverty level.

Options

Accompanying these consequences for women are other negative consequences of higher risks for problem pregnancy outcomes and a decline in preventive health care measures for young children. It is not too much to say that our economic and social policies are matters of life and death for those who depend on the social provision of their needs. However unwanted and unintended these consequences are, they are real for the women we interviewed and women like them.

An important question at this point is what is to be done. There is always the option to do nothing: to recognize the problem and to accept it as preferable to the consequences attached to its solutions. This would be tantamount to making the increased risks to the health of the children of the poor an unintended, unwanted but preferred consequence of our economic arrangements and social policies. Adam Smith, who described the workings of the invisible hand, listed infant mortality among the "inferior ranks of people" as part of the market regulation of labor. "The demand for men, like that for any other commodity, necessarily regulates the production of men." Thus we may choose to do nothing on behalf of women in poverty and their children because their situation is a consequence of labor surplus and should be left to market mechanisms of supply and demand. This is a radical free market approach and an application of the invisible hand to social relations.

Another option is to take some action consistent with our belief in the individual provision for basic needs but inconsistent with a belief in the free market. We could make a public commitment to full employment and guarantee every person able to work a job so that each person would have wage income to meet his or her needs. Our commitment to market forces, especially at present, is likely to make the option of doing nothing more attractive than pursuing a policy of full employment despite its obvious consequence for enabling people a better chance to provide for their basic needs.

We are much more likely to continue what we have been doing and that is to increase incrementally public assistance for dependent populations such as women and children. Congress last year extended Medicaid to all five year old children of low income families whose income is within AFDC eligibility regardless of the number of parents. Many state legislatures have followed suit. The Conference of Governors in March 1985 spoke on behalf of the supplementary food program for Women, Infants and Children (WIC) to defend them from proposed cuts in their federal funding. These are examples of efforts to maintain the levels of the social provision of assistance to young women, mothers and infants or to increase them modestly.

Among these proposals of incremental increases we should consider community-based home intervention programs of the kind that prompted this report. There are numerous benefits which are part of the program. It provides assistance at the local level on a person to person basis. It provides employment, training and work experience for some women. It has the potential for stimulating community action and activity on behalf of local residents. It is effective, according to our preliminary assessments, and it is inexpensive. As a preventive health measure it is cost-effective if only one critically low birth weight is prevented each year in each community.

Obstacles

Calls for incremental increases must be mindful of some fundamental obstacles in achieving them. First, there is sexism. Gloria Steinhem observed that if men bore children, abortion would be a sacrament of the Catholic Church. While this is obvious hyperbole, it does suggest that men make decisions about the priorities of institutions and the allocation of resources. This certainly has bearing on the resources devoted to heart surgery, by-passes, transplants and mechanical heart implants, at the same time that we have no safe and fully effective contraception and infant mortality rates higher than nations with fewer medical resources and per capita incomes.

Likewise, class relations determine the allocation of resources among peope. The needs of "inferior ranks of people" are too often interpreted as a normal state of affairs. The human dimensions of their problem seem different and smaller than the problems of people who are not "inferior". Another and related obstacle is race. Blacks are at higher risk for poverty, negative pregnancy outcomes and infant mortality. Race compounds the obstacle of class relations.

New Attitudes for New Policies

Part of the answer to new forms of social provision for the needs of others is new attitudes toward the relation of individuals and society. Paradoxically, additional provisions for women in poverty and their children will come from attitudes and values we associate with mother and child relations. In a phrase, we will need to feminize politics. This process of feminization is different from the process within poverty and low wage labor which has merely changed the gender of the same phenomenon. In other words, the feminization of politics is not merely having more women who are politicians. That would change politics no more than having more women who are poor has changed poverty. In fact, Margaret Thatcher is evidence that women may defend a radical position on the individual provision for basic needs as adamantly as men.

The feminization of politics needs to proceed in a way similar to the manner with which the women's movement has changed language. That is, we have become more aware of the hidden assumptions and injuries of language and of gender-specific terms. In fact, Carol Gilligan offers us a path from the feminization of language to the feminization of politics in her book, In A Different Voice. Gilligan recounts the bold assertion of Elizabeth Cady Stanton that "SELF-DEVELOPMENT IS A HIGHER DUTY THAN SELF-SACRIFICE." This is and was true when self-sacrifice was invoked on behalf of a duty imputed by someone else and goals which were assumed as an immutable given. But the development which is called for is not self-aggrandizement nor individual growth in some atomized sense. Gilligan offers Jean Baker Miller's view that women begin with a sense of development different from men. Women "develop in a context of attachment and affiliation with others" and "women's sense of self becomes very much organized around being able to make, and then to maintain, affiliations and relationships."

In a set of feminized politics the members of society are related and the relations among us form a continuum beginning with family and continuing through neighborhood, church and work to society. In such a continuum government is not a strange and alien creature whose primary characteristic is its attempt to thwart individual efforts to acquire material goods but another organization we use to mediate the relations among members of society who recognize bonds of responsibity for each other. There is the possibility of excess and abuse in government just as there is in the family, the neighborhood, the work place and in any other set of social relations. The most effective safeguard against abuse in government is the same safeguard against abuse in other social relations: mutual respect and a concern for the full development of each person.

In a set of feminized politics, economic policies towards employment and the conditions and wages of employment and government programs of assistance to dependent populations assume a social responsibility to assure the best chance of some satisfactory level of development of all people. The development of children is especially important because a set of feminized politics assumes that development is a higher duty and responsibility than the sacrifice of some children. It also assumes that all life is equally valuable and that our responsibility for the development of one another does not abide assertions of some people being "inferior" to others. Finally, the feminization of politics and its assumptions about development provide grounds for us all to grieve at the loss of young life and to remove impediments to the fullest development of all individuals including, if not especially, those who are the most vulnerable and dependent upon society.

RESOURCES

Alden, John E.
1984 "Breastfeeding Promotion in Three Rural Indigent Populations." Report of the Surgeon General's Workshop on Breastfeeding and Human Lactation Rockville, MD. Health Resources and Services Administration., pp. 46-52.

Brandt, Edward M. Jr., Assistant Secretary for Health
1984 Letter to the States' Public Health Officers (December 7)

Children's Defense Fund
1985 The Data Book: The Nation, States and Cities. Washington, D.C.

Cobb, Sidney
1976 "Social Support as a Moderator of Life Stress," Psychosomatic Medicine 38:300-14 (1976).

Committee on Nutrition, American Academy of Pediatrics
1982 "The Promotion of Breast-Feeding: Policy Statement Based on Task Force Report." Pediatrics 69:654-661 (May).

Division of Maternal and Child Health
1984 "Effective Pregnancy and Infant Care - An Initiative to Reduce Infant Mortality in the United States - Revised." United States Public Health Services (December).

Dunn, Henry G.
1984 "Social Aspects of Low Birth Weight," Canadian Medical Association Journal, 130:9 (May 1), pp. 1131-1140

Fals Borda, Orlando
1979 "The Problem of Investigating Reality in Order to Transform It," Dialectical Anthropology. Vol. 4 (Spring), pp. 33-55.

Gilligan, Carol
1982 In a Different Voice. Cambridge: Harvard University Press.

Gold, Edwin M.
1984 "The High Risk Pregnancy." in Helen M. Wallace, et al. (eds.) Maternal and Child Health Practices. New York. John Wiley and Sons, pp. 240-8.

Hall, Bud L.
1975 "Participatory Research: An Approach for Change," Convergence. 8:2, pp. 24-32.

Hearings
1984 Infant Mortality Rates: Failure to Close the Black-White Gap, Subcommittee on Health and the Environment of the Committee on Energy and Commerce, 98th Congress, 2nd Session (March 24).

Martinez, Gilbert A.
1984 "Trends in Breastfeeding in the United States." Report of the Surgeon General's Workshop on Breastfeeding and Human Lactation Rockville, MD. Health Resources and Services Administration. pp.18-23.

Mason, James O., Acting Assistant Secretary for Health
1985 Report to the Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, House of Representatives (April 3) Public Health Service.

McCormick, Marie E. et al.
1985 "The Regionalization of Perinatal Services: Summary Evaluation of a National Demonstration Program," Journal of the American Medical Association. 253:6 (February 8), pp. 799-804.

Pearce, Dianna and Harriette McAdoo
1981 Women and Children: Alone and in Poverty. Women's Research and Education Institute, Washington, D.C.

Public Health Reports
1983 Promoting Health/Preventing Disease: Public Health Service Implementation Plans for Attaining the Objectives for the Nation. Public Health Reports: Supplement 98:5 (Sept.-Oct.).

Ruiz, M.P. et al.
1981 "Early Development of Infants with Birth Weight Less than 1,000 Grams with Reference to Mechanical Ventilation in Newborn Period," Pediatrics. 68:3 (September), pp. 330-5.

Southern Governors' Task Force
1985 "Report of the Southern Regional Task Force on Infant Mortality." (February) Washington, D.C.

Walker, D-J. B., et al.
1984 "Cost-Benefit Analysis of Neonatal Intensive Care for Infants Weighing Less than 1000 Grams at Birth." Pediatrics, 74:1 (July), pp. 20-5.

APPENDIX

Components of Table 13

Outcome Measures

Table

A13.1 Prenatal Care and Preventive Child Health Care
A13.2 Prenatal Care and Child Has Shots

A13.3 Number of Prenatal Care Visits and Preventive Child Health Care
A13.4 Number of Prenatal Care Visits and Health Care and Visits for Child in First Six Weeks

Table A13.1

Prenatal Care and Preventive Child Health Care

	Preventive Child Health Care			
Prenatal Care	0	1	Most	Total
No	1	4	7	12
Yes	4	30	150	184
Total	5	34	157	196

X2=4.31 p=.1156

Table A13.2

Prenatal Care and Child Has Shots

	Child Has Shots		
Prenatal Care	No	Yes	Total
No	5	7	12
Yes	33	152	185
Total	38	159	197

X2=2.72 p=.0990

Table A13.3

Number of Prenatal Health Care Visits and Preventive Child Health Care

Prenatal Health Care Visits	Preventive Child Health Care 0	1	Most	Total
11+	1	19	100	120
6-10	1	10	44	55
0- 5	3	3	12	18
Total	5	32	156	193

X2=15.99 p=.0030

Table A13.4

Number of Prenatal Health Care Visits and Health Care Visit for Child in First Six Weeks

Number of Prenatal Health Care Visits	Health Care Visit for Child in first Six Weeks No	Yes	Total
11+	2	132	134
6-10	2	66	68
0- 5	4	15	19
Total	38	213	221

X2=18.38 p=.0001

Components of Table 14

Socio-Economic Measures

Table	
A14.1	Monthly Household Income and Education
A14.2	Monthly Household Income and Smoking
A14.3	Monthly Household Income and Age
A14.4	Monthly Household Income and Racial Minority
A14.5	Education and Smoking
A14.6	Education and Racial Minority
A14.7	Smoking and Age
A14.8	Smoking and Racial Minority

Table A14.1

Monthly Household Income and Education

	Education			
Monthly Household Income	9 or Less	10-11	12 or More	Total
$ 0-250	26	35	31	92
$251-500	26	27	47	100
$501-750	18	16	59	93
$750 or More	5	8	28	41
Total	85	86	165	236

X2= 23.59 p=.0006

Table A14.2

Monthly Household Income and Smoking

	Smoking		
Monthly Household	Nonsmoker	Smoker	Total
$ 0-250	49	47	96
$250-500	56	44	100
$501-750	60	35	95
$751 or More	33	11	44
Total	198	135	333

X2=9.18 p=.1635

Table A14.3

Monthly Household Income and Age

Monthly Household	Age 14-19	 20-29	 30 or older	 Total
$ 0-250	29	58	9	96
$251-500	36	59	5	100
$501-750	26	61	8	95
$751 or More	8	28	8	44
Total	99	206	30	335

X2=9.74 p=.1359

Table A14.4

Monthly Household Income and Racial Minority

Monthly Household Income	Racial Minority Black	 White	 Total
$ 0-250	29	64	93
$251-500	21	77	98
$501-750	34	59	93
$751 or More	14	29	43
Total	98	229	327

X2=5.53 p=.1367

Table A14.5

Education and Smoking

Education	Smoking		
	NonSmoker	Smoker	Total
9 or less	32	45	77
10-11	43	44	87
12 or More	126	48	174
Total	201	135	336

X2=26.32 p=.0000

Table A14.6

Education and Racial Minority

	Racial Minority		
Education	Black	White	Total
9 or Less	5	69	74
10-11	20	67	87
12 or More	73	95	168
Total	98	231	329

X2=35.69 p=.0000

Table A14.7

Smoking and Age

	Age			
Smoking	14-19	20-29	30 or Older	Total
Nonsmoker	54	133	19	206
Smoker	45	80	15	140
Total	99	213	34	348

X2=6.87 p=.1430

Table A14.8

Smoking and Racial Minority

	Racial Minority		
Smoking	Black	White	Total
Nonsmoker	78	126	205
Smoker	26	108	134
Total	104	235	339

X2=12.38 p=.0004

Components of Table 15

Socio-Economic Measures
and
Outcome Measures

Table	
A15.1	Monthly Household Income and Last Pregnancy Planned
A15.2	Monthly Household Income and Number of Prenatal Health Care Visits
A15.3	Monthly Household Income and Negative Pregnancy Outcome
A15.4	Monthly Household Income and Breast Feeding
A15.5	Monthly Household Income and Preventive Child Health Care
A15.6	Education and Number of Prenatal Health Care Visits
A15.7	Education and Breast Feeding
A15.8	Education and Preventive Child Health Care
A15.9	Education and Child Has Shots
A15.10	Smoking and Low Birth Weight
A15.11	Smoking and Preventive Child Health Care
A15.12	Age and Latest Pregnancy Planned
A15.13	Racial Minority and Negative Pregnancy Outcome
A15.14	Racial Minority and Low Birth Weight
A15.15	Racial Minority and Breast Feeding
A15.16	Racial Minority and Stillbirths

Table A15.1

Monthly Household Income and Latest Pregnancy Planned

Monthly Household Income	Latest Pregnancy Planned No	Yes	Total
$ 0-250	70	25	95
$250-500	67	33	100
$501-750	64	31	95
$750 or More	24	20	44
Total	225	109	334

X2=5.02 p=.1703

Table 15.2

Monthly Household Income and Number of Prenatal Health Care Visits

Monthly Household Income	Number of Prenatal Health Care Visits 11 or More	6 to 10	5 or Less	Total
$ 0-250	40	19	12	71
$251-500	35	22	8	65
$501-750	46	23	3	72
$751 or More	25	6	0	31
Total	146	70	23	239

X2=14.29 p=.0265

Table A15.3

Monthly Household Income and Negative Pregnancy Outcome

Monthly Household Income	Negative Pregnancy Outcome Best Outcome	Worst Outcome	Total
$ 0-250	64	6	70
$251-500	58	8	66
$501-750	63	5	68
$750 or More	28	5	33
Total	213	24	237
X2=1.96	p=.5797		

Table A15.4

Monthly Household Income and Breast Feeding

Monthly Household Income	Breast Feeding No	Yes	Total
$ 0-250	56	14	70
$251-500	40	26	66
$501-750	41	29	70
$751 or More	19	14	33
Total	156	83	239
X2=9.58 p=.0225			

Table A15.5

Monthly Household Income and Preventive Child Health Care

	Preventive Child Health Care			
Monthly Household Income	None	1	Most	Total
$ 0-250	2	15	41	58
$251-500	2	12	40	54
$501-750	1	3	52	56
$750 or More	0	1	22	23
Total	5	31	147	191

X2=14.39 p=.0255

Table A15.6

Education and Breast Feeding

	Breast Feeding		
Education	No	Yes	Total
9 or less	44	11	55
10 - 11	41	19	60
12 or More	68	55	123
Total	153	85	238

X2=10.68 p=.0048

Table 15.7

Education and
Number of Prenatal Health Care Visits

	Number of Prenatal Health Care Visits			
Education	11 or More	6 to 10	5 or Less	Total
9 or Less	26	24	4	54
10-11	36	18	8	62
12 or More	83	29	12	124
Total	145	71	24	240

X2=8.82 p=.0658

Table A15.8

Education and Preventive Child Health Care

	Preventive Child Health Care			
Education	0	1	Most	Total
9 or Less	2	10	33	45
10-11	3	15	34	52
12 or More	0	9	86	95
Total	5	34	153	192

X2=15.82 p=.0033

Table A15.9

Education and Child Has Shots

Education	Child Has Shots No	Yes	Total
9 or less	12	33	45
10-11	17	35	52
12 or More	9	87	96
Total	38	155	193

X2=13.04 p=.0012

Table A15.10

Smoking and Low Birth Weight

Smoking	Low Birth Weight Over 5 1/2 lbs	5 1/2lbs or Under	Total
Nonsmoker	137	7	144
Smoker	89	13	102
Total	226	20	246

X2=7.89 p=.0050

Table A15.11

Smoking and Preventive Child Health Care

	Preventive Child Health Care			
Smoking	0	1	Most	Total
Nonsmoker	1	17	102	120
Smoker	4	17	57	78
Total	5	34	159	198

X2=5.89 p=.0526

Table A15.12

Age and Latest Pregnancy Planned

	Latest Pregnancy Planned		
Age	No	Yes	Total
14-19	79	22	101
20-29	134	78	212
30 or Older	17	17	34
Total	230	117	347

X2=11.37 p=.0034

Table A15.13

Racial Minority and Negative Pregnancy Outcome

	Negative Pregnancy Outcome		
Racial Minority	No	Yes	Total
Black	64	13	77
White	155	11	166
Total	219	24	243

X2=5.12 p=.0237

Table A15.14

Racial Minority and Low Birth Weight

	Low Birth Weight		
Racial Minority	Over 5 1/2lbs	5 1/2lbs or less	Total
Black	66	9	75
White	157	9	166
Total	223	18	241

X2=2.35 p=.1251

Table A15.15

Racial Minority and Stillbirths

	Stillbirths		
Racial Minority	No	Yes	Total
Black	73	5	78
White	167	1	168
Total	240	6	246

X2=5.32 p=.0210

Table A15.16

Racial Minority and Breast Feeding

	Breast Feeding		
Race	No	Yes	Total
Black	57	18	75
White	104	65	169
Total	161	83	244

X2=4.22 p=.0400

Components of Table 16

Socio-Economic Measures
and
Intermediate Measures - Resources

Table

A16.1 Monthly Household Income and Economic Stress
A16.2 Monthly Household Income and Insufficient Funds to Pay Bills
A16.3 Monthly Household Income and Insufficient Funds for Food
A16.4 Monthly Household Income and Support Network
A16.5 Monthly Household Income and Family as Support Network
A16.6 Monthly Household Income and Nonemployment Income Sources
A16.7 Monthly Household Income and Female Headed Household

A16.8 Education and Economic Stress
A16.9 Education and Insufficient Funds for Food
A16.10 Education and Nonemployment Income Sources

A16.11 Smoking and Economic Stress
A16.12 Smoking and Insufficient Funds for Bills
A16.13 Smoking and Insufficient Funds for Food
A16.14 Smoking and Nonemployment Income Sources

A16.15 Racial Minority and Female Headed Household

Table A16.1

Monthly Household Income and Economic Stress

	Economic Stress						
Monthly Household Income	Least	1	2	3	4	Most	Total
$ 0-250	8	13	14	20	23	14	92
$251-500	15	23	20	19	14	6	93
$501-750	21	24	25	14	4	4	92
$750 or More	25	8	6	1	1	0	41
Total	69	68	65	54	42	24	322

X2=84.08 p=.0000

TABLE A16.2

Monthly Household Income and Insufficient Funds for Bills

	Insufficient Funds for Bills				
Monthly Household Income	Never	Sometimes	Usually	Always	Total
$ 0 - 250	12	15	18	47	92
$250 - 500	17	26	27	28	98
$501 - 750	22	33	25	13	93
$750 or More	28	7	4	2	41
Total	79	81	74	90	324

X2=84.53 p=.0000

Table A16.3

Monthly Household Income and Insufficient Funds for Food

Monthly Household Income	Insufficient Funds for Food			
	Never	Sometimes	Often	Total
$ 0 - 250	38	38	18	94
$251 - 500	63	27	9	99
$501 - 750	66	21	6	93
$751 or More	36	5	3	44
Total	203	91	36	330

X2=30.35 p=.0000

Table A16.4

Monthly Household Income and Support Network

Monthly Household Income	Support Network					
	Least	2	3	4	Most	Total
$ 0-250	0	6	16	22	18	62
$250-500	1	7	9	25	17	59
$501-750	0	1	14	33	17	65
$751 or More	0	1	13	7	11	32
Total	1	15	52	87	63	218

X2=20.15 p=.0642

Table A16.5

Monthly Household Income and Family as Support Network

Monthly Household Income	Family as Support Network Most Family	1	2	Least Family	Total
$ 0-250	25	4	0	0	29
$251-500	13	10	1	2	26
$501-750	22	12	2	0	36
$751 or More	7	6	0	0	13
Total	67	32	3	2	104

X2=15.74 p=.0725

Table A16.6

Monthly Household Income and Nonemployment Income Sources

Monthly Household Income	Nonemployment Income Sources 0	1	2	3	Total
$ 0-250	14	70	7	0	91
$251-500	45	44	9	0	98
$501-750	55	25	10	0	90
$751 or More	35	4	4	1	44
Total	149	143	30	1	323

X2=80.35 p=.0000

Table A16.7

Monthly Household Income and Female Headed Household

Monthly Household Income	Female Headed Household Yes	No	Total
$ 0-250	41	55	96
$251-500	23	77	100
$501-750	8	87	95
$751- or More	4	40	44
Total	76	259	335

X2=367.61 p=.0000

Table A16.8

Education and Economic Stress

Education	Economic Stress Least	1	2	3	4	Most	Total
9 or Less	10	14	12	10	17	11	74
10-11	17	16	21	16	8	5	83
12 or More	43	38	31	27	17	8	164
Total	70	68	64	53	42	24	331

X2=21.41 p=.0184

Table A16.9

Education and Insufficient Funds for Food

	Insufficient Funds for Food			
Education	Never	Sometimes	Usually	Total
9 or less	34	27	14	75
10 - 11	54	25	6	85
12 or More	117	38	15	170
Total	205	90	35	330

X2=14.52 p=.0058

Table A16.10

Education and Nonemployment Income Sources

	Nonemployment Income Sources			
Education	0	1	2	Total
9 or less	31	37	7	75
10 - 11	31	45	8	84
12 or More	91	59	15	165
Total	153	141	30	324

X2=10.51 p=.1049

Table A16.11

Smoking and Economic Stress

	Economic Stress						
Smoking	Least	1	2	3	4	Most	Total
Nonsmoker	46	47	41	31	21	8	194
Smoker	26	22	26	23	21	17	135
Total	72	69	67	54	42	25	329

X2=12.21 p=.0320

Table A16.12

Smoking and Insufficient Funds for Bills

	Insufficient Funds for Bills				
Smoking	Never	Sometimes	Usually	Always	Total
Nonsmoker	52	58	40	45	195
Smoker	31	24	34	47	136
Total	83	82	74	92	331

X2=9.73 p=.0210

Table A16.13

Smoking and Insufficient Funds for Food

	Insufficient Funds for Food			
Smoking	Never	Sometimes	Often	Total
Nonsmoker	135	51	17	203
Smoker	76	39	22	137
Total	211	90	39	340

X2=6.16 p=.0460

Table A16.14

Smoking and Nonemployment Income Sources

	Nonemployment Income Sources				
Smoking	0	1	2	3	Total
Nonsmoker	107	70	18	0	195
Smoker	50	75	12	1	138
Total	157	145	30	1	333

X2=13.71 p=.0003

Table A16.15

Racial Minority and Female Headed Household

	Female Headed Household		
Racial Minority	No	Yes	Total
Black	40	65	105
White	37	199	236
Total	77	264	341

X2=19.63 p=.0000

Components of Table 17

Outcome Measures and Intermediate Measures - Resources

Table	
A17.1	Birth Control Use and Support Network
A17.2	Birth Control Use and Nonemployment Income Sources
A17.3	Birth Control Use and Female Headed Household
A17.4	Latest Pregnancy Planned and Economic Stress
A17.5	Latest Pregnancy Planned and Insufficient Funds for Bills
A17.6	Latest Pregnancy Planned and Family as Support Network
A17.7	Latest Pregnancy Planned and Nonemployment Income Sources
A17.8	Latest Pregnancy Planned and Female Headed Household
A17.9	Prenatal Health Care and Economic Stress
A17.10	Prenatal Health Care and Support Network
A17.11	Number of Prenatal Health Care Visits and Economic Stress
A17.12	Number of Prenatal Health Care Visits and Support Network
A17.13	Number of Prenatal Health Care Visits and Nonemployment Income Sources
A17.14	Negative Pregnancy Outcome and Economic Stress
A17.15	Stillbirth and Economic Stress
A17.16	Breast Fed Youngest Child and Insufficient Funds for Food
A17.17	Breast Fed Youngest Child and Family as Support Network
A17.18	Breast Fed Youngest Child and Nonemployment Income Source
A17.19	Breast Fed Youngest Child and Female Headed Household
A17.20	Preventive Child Health Care and Economic Stress
A17.21	Preventive Child Care and Insufficient Funds to Pay Bills
A17.22	Preventive Child Health Care and Nonemployment Income Sources
A17.23	Preventive Child Health Care and Female Headed Household
A17.24	Child has Shots and Economic Stress
A17.25	Child has Shots and Insufficient Funds for Bills
A17.26	Child has Shots and Family as Support Network
A17.27	Child has Shots and Nonemployment Income Sources
A17.28	Child has Shots and Female Headed Households
A17.29	Health Care Visit for Child in First Six Weeks and Insufficient Funds for Bills
A17.30	Health Care Visit for Child in First Six Weeks and Nonemployment Income Sources

Table A17.1

Birth Control Use and Support Network

	Birth Control Use		
Support Network	No	Yes	Total
Least	7	8	15
1	18	26	44
2	26	55	81
Most	11	42	53
Total	62	131	193
X2=6.15	p=.1043		

Table A17. 2

Birth Control Use and Nonemployment Income Sources

	Birth Control Use		
Nonemployment Income Sources	No	Yes	Total
0	35	64	99
1	24	68	92
2	9	9	18
Total	68	141	209
X2=4.60	p=.1001		

Table A17.3

Birth Control Use and Female Headed Household

	Female Headed Household		
Birth Control Use	Yes	No	Total
No	23	30	53
Yes	47	117	164
Total	70	147	217

X2=3.34 p=.0678

Table A17.4

Last Pregnancy Planned and Economic Stress

	Economic Stress				
Last Pregnancy Planned	Least	1	2	Most	Total
No	85	46	42	46	215
Yes	57	21	13	20	111
Total	147	67	55	66	330

X2=5.64 p=.1304

Table A17.5

Latest Pregnancy Planned and Insufficient Funds for Bills

	Insufficient Funds for Bills				
Latest Pregnancy Planned	Never	Sometimes	Usually	Always	Total
No	51	48	56	65	220
Yes	32	35	19	26	112
Total	83	83	75	91	332

X2=6.96 p=.0733

Table A17.6

Latest Pregnancy Planned and Family as Support Network

	Family as Support Network					
Latest Pregnancy Planned	Most Family Oriented	1	2	3	Least Family Oriented	Total
No	28	28	19	1	1	77
Yes	4	13	9	3	1	30
Total	32	41	28	4	2	107

X2=9.19 p=.0566

Table A17.7

Latest Pregnancy Planned and Nonemployment Income Sources

	Nonemployment Income Sources				
Latest Pregnancy Planned	0	1	2	3	Total
No	96	105	23	0	224
Yes	62	40	7	1	110
Total	158	145	30	1	334

X2= 8.01 p=.0458

Table A17.8

Latest Pregnancy Planned and Female Headed Household

	Female Headed Household		
Latest Pregnancy Planned	Yes	No	Total
Yes	66	164	230
No	14	103	117
Total	80	267	347

X2=11.31 p=.0008

Table A17.9

Prenatal Health Care and Economic Stress

	Prenatal Care		
Economic Stress	No	Yes	Total
Least	2	54	56
1	0	47	47
2	4	49	53
3	5	38	43
4	3	24	27
Most	1	18	19
Total	15	230	245

X2=7.35 p=.1960

Table A17.10

Prenatal Health Care and Support Network

	Prenatal Health Care		
Support Network	No	Yes	Total
Least	1	0	1
2	1	15	16
3	5	49	54
4	4	88	92
Most	4	60	64
Total	15	212	227

X2=15.52 p=.0037

Table A17.11

Number of Prenatal Health Care Visits and Economic Stress

	Number of Prenatal Health Care Visits			
Economic Stress	11 or more	6 to 10	5 or Less	Total
Least	43	11	2	56
1	29	13	4	46
2	27	20	4	51
3	24	12	6	42
4	15	5	7	27
Most	10	9	0	19
Total	148	70	23	241

X2=22.72 p=.0118

Table A17.12

Number of Prenatal Health Care Visits and Support Network

	Number of Visits			
Support Network	11 or More	6 to 10	5 or less	Total
Least	0	2	0	2
2	9	7	0	16
3	35	13	3	51
4	60	19	12	91
Most	36	22	3	61
Total	140	63	18	221

X2=15.43 p=.0512

Table A17.13

Number of Prenatal Health Care Visits and Nonemployment Income Sources

	Number of Prenatal Health Care Visits			
Nonemployment Income Sources	11 or more	6-10	5 or less	Total
0	76	31	6	113
1	60	33	17	110
2	11	7	1	19
Total	147	71	24	242

X2=8.27 p=.0823

Table A17.14

Negative Pregnancy Outcome and Economic Stress

	Negative Pregnancy Outcome		
Economic Stress	Best Outcomes	Worst Outcomes	Total
Least	49	7	56
1	44	1	45
2	43	8	51
3	39	4	43
4	18	4	22
Most	20	0	20
Total	213	24	237

X2=9.02 p=.1082

Table A17.15

Stillbirth and Economic Stress

	Stillbirth		
Economic Stress	Live Birth	Stillbirth	Total
Least	54	2	56
1	46	0	46
2	48	4	52
3	43	0	43
4	22	1	23
Most	20	0	20
Total	233	7	240

X2=7.71 p=.1727

Table A17.16

Breast Fed Youngest Child and Insufficient Funds for Food

	Breast Fed Youngest Child		
Insufficient Funds for Food	No	Yes	Total
Never	94	62	156
Sometimes	41	21	62
Often	26	3	29
Total	161	86	274

X2=9.35 p=.0093

Table A17.17

Breast Fed Youngest Child and Family as Support Network

	Breast Fed Youngest Child		
Family as Support Network	No	Yes	Total
Most Family Oriented	48	19	67
1	16	17	33
2	2	4	6
Least Family Oriented	2	0	2
Total	48	40	108

X2=8.57 p=.0357

Table A17.18

Breast Fed Youngest Child and Nonemployment Income Source

	Breast Fed Youngest Child		
Nonemployment Income Source	No	Yes	Total
0	67	47	114
1	75	31	106
2	16	6	22
Total	158	84	242

X2=4.07 p=.1306

Table A17.19

Breast Fed Youngest Child and Female Headed Household

	Breast Fed Youngest Child		
Female Headed Household	No	Yes	Total
Yes	45	13	58
No	119	73	192
Total	164	86	250

X2=4.81 p=.0418

Table A17.20

Preventive Child Health Care and Economic Stress

	Preventive Child Health Care			
Economic Stress	0	1	Most	Total
Least	0	6	35	41
1	0	3	34	37
2	2	4	34	40
3	2	12	22	36
4	0	4	16	20
Most	1	3	11	15
Total	5	32	152	189

X2=16.97 p=.0749

Table A17.21

Preventive Child Health care and Insufficient Funds for Bills

Insufficient Funds for Bills

Preventive Child Health Care	Never	Sometimes	Usually	Always	Total
0	0	0	2	3	5
1	7	4	6	15	32
Most	41	40	37	36	154
Total	48	44	45	54	191

X2=11.04 p=.0870

Table A17.22

Preventive Child Health Care and Nonemployment Income Sources

Preventive Child Health Care

Nonemployment Income Source	0	1	Most	Total
0	0	9	91	100
1	4	22	55	81
2	1	3	9	13
Total	5	34	155	194

X2=17.50 p=.0015

Table A17.23

Preventive Child Health Care and Female Headed Household

	Preventive Child Health Care			
Female Headed Household	0	1	Most	Total
Yes	1	13	30	44
No	4	21	129	154
Total	5	34	159	198

X2=6.09 p=.0475

Table A17.24

Child has Shots and Economic Stress

	Child has Shots		
Economic Stress	No	Yes	Total
Least	6	35	41
1	3	35	38
2	6	34	40
3	13	23	36
4	4	16	20
Most	4	11	15
Total	36	154	190

X2=11.43 p=.0435

Table A17.25

Child has Shots and Insufficient Funds for Bills

Sufficient Funds for Bills	Child has Shots No	Yes	Total
Never	7	41	48
Sometimes	4	41	45
Usually	8	37	45
Always	17	37	54
Total	36	156	192

X2=9.19 p=.0268

Table A17.26

Child has Shots and Family as Support Network

Child Has Shots	Family as Support Network Most	1	Least	Total
No	13	2	0	15
Yes	41	26	5	72
Total	53	29	5	87

X2=3.09 p=.2132

Table A17.27

Child has Shots and Nonemployment Income Sources

	Child Has Shots		
Nonemployment Income Sources	No	Yes	Total
0	9	91	100
1	26	56	82
2	3	10	13
Total	38	157	195

X2=14.92 p=.0006

Table A17.28

Child has Shots and Female Headed Household

	Child Has Shots		
Female Headed Household	No	Yes	Total
Yes	14	30	44
No	24	131	155
Total	38	161	199

X2=4.90 p=.0267

Table A17.29

Health Care Visit for Child in First Six Weeks and Insufficient Funds for Bills

	Health Care Visit for Child in First Six Weeks		
Sufficient Funds for Bills	No	Yes	Total
Never	1	56	57
Sometimes	0	52	52
Usually	2	50	52
Always	5	54	59
Total	8	212	220

X2=6.48 p=.0902

Table A17.30

Health Care Visit for Child in First Six Weeks and Nonemployment Income Sources

	Health Care Visit for Child in First Six Weeks		
Nonemployment Income Sources	No	Yes	Total
0	0	107	107
1	6	92	98
2	2	14	16
Total	8	213	221

X2=9.39 p=.0091

Components of Table 18

Socio-Economic Measures
and
Intermediate Measures - Information

Table

A18.1 Monthly Household Income and Family as Information Source
A18.2 Monthly Household Income and Good Opinion of Breast Milk
A18.3 Monthly Household Income and Knowledge of Serious Prenatal Conditions

A18.4 Education and Birth Control Knowledge
A18.5 Education and Knowledge of Prenatal Conditions

A18.6 Age and Birth Control Knowledge
A18.7 Age and Birth Control Method
A18.8 Age and Family as Source of Information
A18.9 Age and Knowledge of Prenatal Conditions
A18.10 Age and Knowledge of Serious Prenatal Conditions

A18.11 Racial Minority and Good Opinion of Breast Milk
A18.12 Racial Minority and Knowledge of Prenatal Conditions
A18.13 Racial Minority and Knowledge of Serious Prenatal Conditions

Table A18.1

Monthly Household Income and Family as Information Source

Monthly Household Income	Family as Information Source Most Family Oriented	1	2	Least Family Oriented	Total
$ 0-250	5	13	6	0	24
$251-500	2	10	13	2	27
$501-750	4	9	17	1	31
$751 or More	0	2	7	3	12
Total	11	34	43	6	94
X2=19.28	p=.0229				

Table A18.2

Monthly Household Income and Good Opinion of Breast Milk

Monthly Household Income	Good Opinion of Breast Milk Best	Same as Formula	Formula Better	Total
$ 0 - 250	12	4	7	25
$251 - 500	14	10	1	25
$501 - 750	21	6	3	30
$751 or More	10	2	0	12
Total	57	22	11	90
X2= 11.50	p=.0741			

Table A18.3

Monthly Household Income and Knowledge of Serious Prenatal Conditions

	Knowledge of Serious Prenatal Conditions			
Monthly Household Income	0–2	3–4	5	Total
$ 0 - 250	31	34	31	96
$251 - 500	14	48	37	99
$501 - 750	24	38	33	95
$751 or More	11	23	10	44
Total	80	143	111	344

X2=11.98 p=.0624

Table A18.4

Education and Birth Control Knowledge

	Birth Control Knowledge		
Education	No	Yes	Total
9 or Less	13	64	77
10–11	13	74	87
12 or More	13	159	172
Total	39	297	336

X2=5.78 p=.0556

Table A18.5

Education and Knowledge of Prenatal Conditions

	Knowledge of Prenatal Conditions				
Education	0 to 4	5 and 6	7 and 8	9 and 10	Total
9 or Less	5	15	27	30	77
10-11	11	8	24	41	84
12 or More	11	15	50	95	171
Total	27	38	101	166	332

X2=12.76 p=.0470

Table A18.6

Age and Birth Control Knowledge

	Birth Control Knowledge		
Age	No	Yes	Total
14-19	17	84	101
20-29	18	194	212
30 or Older	5	29	34
Total	40	307	347

X2=5.94 p=.0805

Table A18.7

Age and Birth Control Method

	Birth Control Method			
Age	Pill	Other	Sterilization	Total
14-19	33	8	2	44
20-29	55	17	25	97
30 or Older	4	2	8	14
Total	92	27	36	155

X2=16.56 p=.0023

Table A8.8

Age and Family as Source of Information

	Family as Source of Information				
Age	Most	1	2	Least	Total
14-19	5	7	12	1	25
20-29	6	27	30	3	66
30 or older	0	1	2	2	5
Total	11	35	44	6	96

X2=13.39 p=.0372

Table A18.9

Age and Knowledge of Prenatal Conditions

	Knowledge of Prenatal Conditions				
Age	0-4	5 and 6	7 and 8	9 and 10	Total
14-19	13	15	38	34	100
20-29	17	23	53	115	208
30 or Older	0	3	10	21	34
Total	30	41	101	170	342

X2=17.14 p=.0088

Table A18.10

Age and Knowledge of Serious Prenatal Conditions

	Knowledge of Serious Prenatal Conditions			
Age	0 to 2	3 to 4	5	Total
14-19	28	50	2	101
20-29	51	88	73	212
30 or More	4	11	19	34
Total	83	149	115	347

X2=13.40 p=.0095

Table A18.11

Racial Minority and Good Opinion of Breast Milk

	Good Opinion of Breast Milk			
Racial Minority	Best	Same as Formula	Formula Better	Total
Black	27	28	16	71
White	112	33	18	163
Total	139	61	34	234

X2=19.32 p=.0001

Table A18.12

Racial Minority and Knowledge of Prenatal Conditions

	Knowledge of Prenatal Conditions				
Racial Minority	0 to 4	5 and 6	7 and 8	9 and 10	Total
Black	17	17	27	40	101
White	12	24	71	127	234
Total	29	41	98	167	335

X2=17.15 p=.0007

Table A18.13

Racial Minority and Knowledge of Serious Prenatal Conditions

	Knowledge of Serious Prenatal Conditions			
Racial Minority	0 to 2	3 to 4	5	Total
Black	35	41	28	104
White	44	105	87	236
Total	79	146	115	340

X2=9.54 p=.0085

Components of Table 19

Outcome Measures
and
Intermediate Measures - Information

Table	
A19.1	Birth Control Use and Birth Control Knowledge
A19.2	Latest Pregnancy Planned and Birth Control Knowledge Conditions
A19.3	Breast Fed Youngest Child and Family as Information Source
A19.4	Breast Fed Youngest Child and Good Opinion of Breast Milk
A19.5	Preventive Child Health Care and Family as Information Source
A19.6	Child has Shots and Family as Information Source

Table A19.1

Birth Control Use and Birth Control Knowledge

	Birth Control Use		
Birth Control Knowledge	No	Yes	Total
No	8	2	10
Yes	62	145	207
Total	70	147	217
X2=8.76	p=.003		

Table A19.2

Latest Pregnancy Planned and Birth Control Knowledge

	Birth Control Knowledge		
Latest Pregnancy Planned	No	Yes	Total
No	32	197	229
Yes	7	110	117
Total	39	307	346
X2=4.18	p=.0410		

Table A19.3

Breast Fed Youngest Child and Family as Information Source

	Breast Fed Youngest Child		
Source of Information	No	Yes	Total
Family	10	1	11
1	19	16	35
2	20	24	44
Other	6	1	7
Total	55	42	97

X2=10.0 p=.0186

Table 19.4

Breast Fed Youngest Child and Good Opinion of Breast Milk

	Breast Fed Youngest Child		
Opinion on Breast Feeding	No	Yes	Total
Best	67	74	141
Same as Formula	55	8	63
Formula Better	31	3	34
Total	153	85	238

X2=42.51 p=.0000

Table A19.5

Preventive Child Health Care and Source of Information

	Preventive Child Health Care			
Source of Information	0	1	Most	Total
Most Family Oriented	0	4	6	10
1	2	4	21	27
2	0	2	34	36
Least Family Oriented	0	0	6	6
Total	2	10	67	79

X2=13.49 p=.0359

Table A19.6

Child Has Shots and Family as Information Source

	Child Has Shots		
Family as Information Source	No	Yes	Total
Most	4	6	10
1	6	22	28
2	2	34	36
Least	0	6	6
Total	12	68	80

X2=9.39 p=.0246

Components of Table 20

Socio-Economic Measures and Intermediate Measures - Access

Table

A20.1 Monthly Household Income and Transportation
A20.2 Monthly Household Income and Satisfaction with Child's Health Care
A20.3 Monthly Household Income and Average Wait to see Child's Health Care Provider
A20.4 Monthly Household Income and Form of Payment for Prenatal Health Care
A20.5 Monthly Household Income and Medicaid or Other Insurance

A20.6 Education and Transportation
A20.7 Education and Form of Payment for Prenatal Health Care

A20.8 Age and Form of Payment for Prenatal Health Care

A20.9 Racial Minority and Third Party Payment for Prenatal Care
A20.10 Racial Minority and Medicaid or Other Insurance

Table A20.1

Monthly Household Income and Transportation

	Transportation		
Monthly Household Income	No	Yes	Total
$ 0 - 250	27	38	65
$251 - 500	18	43	61
$501 - 750	10	58	68
$750 or More	3	30	33
Total	58	169	227

X2=18.14 p=.0004

Table A20.2

Monthly Household Income and Satisfaction with Child's Health Care

	Satisfaction with Child's Health Care		
Monthly Household Income	No	Yes	Total
$ 0-250	5	63	68
$251-500	9	55	64
$501-750	4	65	69
$751 or More	0	30	30
Total	18	213	231

X2=6.44 p=.0921

Table A20.3

Monthly Household Income and Average Wait to See Child's Health Care Provider

Monthly Household Income	Average Wait to See Child's Health Care Provider				
	1/2hr	1/2 to 1 hr	1-2hrs	2+hrs	Total
$ 0 - 250	25	27	11	6	69
$251 - 500	24	21	19	2	66
$501 - 750	37	20	9	3	60
$750 or More	20	9	2	0	31
Total	106	77	41	11	235

X2=19.42 p=.0218

Table A20.4

Monthly Household Income and Form of Payment for Prenatal Health Care

Monthly Household Income	Form of Payment for Prenatal Health Care					
	Free	Medicaid	Private Payment	Work Ins.	Can't Pay	Total
$ 0-250	7	17	3	0	1	27
$251-500	6	17	11	1	2	37
$501-750	5	5	9	13	1	33
$751 or More	0	0	7	8	1	16
Total	18	39	30	22	5	114

X2=50.67 p=.0000

Table A20.5

Monthly Household Income and Medicaid or Other Insurance

	Medicaid or Other Insurance		
Monthly Household Income	No	Yes	Total
$ 0-250	32	62	94
$251-500	45	54	99
$501-750	43	50	93
$751 or More	9	34	43
Total	129	200	329

X2=10.63 p=.0139

Table A20.6

Education and Transportation

	Transportation		
Education	No	Yes	Total
9 or less	20	34	54
10 and 11	22	37	59
12 or More	19	96	115
Total	61	167	228

X2=12.40 p=.0020

Table A20.7

Education and Form of Payment for Prenatal Health Care

	Form of Payment for Prenatal Health Care					
Education	Free	Medicaid	Private Payment	Work Ins.	Can't Pay	Total
9 or Less	3	14	5	2	3	27
10-11	6	17	4	5	0	32
12 or More	9	7	21	17	4	58
Total	18	38	30	24	7	117

X2=28.54 p=.0004

Table A20.8

Age and Form of Payment for Prenatal Health Care

	Form of Payment for Prenatal Health Care					
Age	Free	Medicaid	Private Payment	Work Ins.	Can't Pay	Total
14-19	7	24	6	3	2	42
20-29	10	13	22	18	4	67
30 or Older	1	2	2	3	1	9
Total	18	39	30	24	7	118

X2=21.42 p=.0061

Table A20.9
Racial Minority and Third Party Payment for Prenatal Care

Third Party Payment for Prenatal Care

Racial Minority	Free	Medicaid	Private	Ins	Can't Pay	Total
Black	4	12	4	12	2	34
White	13	27	26	12	4	82
Total	17	39	30	34	6	116

X2=9.02 p=.0607

Table A20.10

Racial Minority and Medicaid or Other Insurance

Medicaid or Other Insurance

Racial Minority	No	Yes	Total
Black	31	73	104
White	102	130	232
Total	133	203	336

X2=5.44 p=.0197

Components of Table 21

Outcome Measures
and
Intermediate Measures - Access

Table	
A21.1	Preventive Child Health Care and Transportation
A21.2	Child Has Shots and Transporation

Table A21.1

Preventive Child Health Care and Transportation

	Preventive Child Health Care			
Transportation	0	1	Most	Total
No	3	17	30	50
Yes	2	17	119	138
Total	5	34	149	188

X=15.58 p=.0004

Table A21.2

Child Has Shots and Prenatal Care

	Child Has Shots		
Prenatal Care	No	Yes	Total
No	5	7	12
Yes	33	152	185
Total	38	159	197

X=2.72 p=.0990

Components of Table 22

Intermediate Measures - Resources

Table	
A22.1	Economic Stress and Family as Support Network
A22.2	Economic Stress and Nonemployment Income Sources
A22.3	Economic Stress and Female Headed Household
A22.4	Family as Support Network and Nonemployment Income Sources
A22.5	Nonemployment Income Sources and Female Headed Household

Table A22.1

Economic Stress and Family as Support Network

Family as Support Network

Economic Stress	Most Family Oriented	2	3	Least Family Oriented	Total
Least	13	8	3	1	25
1	9	10	1	0	20
2	12	7	0	0	19
3	15	4	2	0	21
4	11	2	0	0	13
Most	6	0	0	1	7
Total	66	31	6	2	105

X2=22.36 p=.0986

Table A22.2

Economic Stress and Nonemploment Income Sources

Nonemployment Income Sources

Economic Stress	0	1	2	Total
Least	44	21	4	69
1	35	27	5	67
2	30	25	8	63
3	21	25	8	54
4	12	29	1	42
Most	8	13	3	24
Total	150	140	28	319

X2=30.01 p=.0119

Table A22.3

Economic Stress and Female Headed Household

	Female Headed Household		
Economic Stress	Yes	No	Total
Least	11	61	72
1	9	61	70
2	23	44	67
3	9	46	55
4	14	28	42
Most	6	19	25
Total	72	259	331

X2=15.58 p=.0082

Table A22.4

Family as Support Network and Nonemployment Income Sources

	Nonemployment Income Sources			
Family as Support Network	1	2	3	Total
Most Family Oriented	20	35	9	64
1	22	9	1	32
2	3	1	1	5
Least Family Oriented	2	0	0	2
Total	47	45	11	103

X2=16.25 p=.0125

Table 22.5

Nonemployment Income Sources and Female Headed Household

	Female Headed Household		
Nonemployment Income Sources	Yes	No	Total
0	16	142	158
1	57	89	146
2	4	26	30
3	0	1	1
Total	77	258	335

X2=37.90 p=.0000

Components of Table 23

Intermediate Measures - Resources
and
Intermediate Measures - Information

Table

A23.1 Economic Stress and Birth Control Knowledge

A23.2 Support Network and Birth Control Knowledge

A23.3 Family as Support Network and Family as Information Source

A23.4 Nonemployment Income Sources and Birth Control Knowledge
A23.5 Nonemployment Income Income Sources and Family as Information Source
A23.6 Nonemployment Income Sources and Knowledge of Prenatal Conditions
A23.7 Nonemployment Income Sources and Knowledge of Serious Prenatal Conditions

A23.8 Female Headed Household and Good Opinion of Breast Milk

Table A23.1

Economic Stress and Birth Control Knowledge

	Birth Control Knowledge		
Economic Stress	No	Yes	Total
Least	6	66	72
1	5	65	70
2	6	61	67
3	10	45	55
4	2	40	42
Most	6	18	24
Total	35	295	330

X2=11.56 p=.0414

Table 23.2

Support Network and Birth Control Knowledge

	Birth Control Knowledge		
Support Network	No	Yes	Total
Least	1	0	1
2	3	13	16
3	7	47	54
4	5	87	92
Most	6	58	64
Total	22	205	227

X2=13.39 p=.0095

Table A23.5

Nonemployment Income Sources and Family as Information Source

Family as Information Source

Nonemployment Income Sources	Most Family Oriented	1	2	Least Family Oriented	Total
0	4	8	25	5	42
1	6	21	13	1	41
2	0	4	4	1	9
Total	10	33	42	7	92

X2=13.90 p=.0308

Table A23.6

Nonemployment Income Sources and Knowledge of Prenatal Conditions

Knowledge of Prenatal Conditions

Nonemployment Income Sources	0-4	5-6	7-8	9-10	Total
0	9	15	56	76	156
1	12	22	34	75	143
2	9	3	6	12	30
Total	30	40	96	163	329

X2=26.04 p=.0020

Table A23.7

Nonemployment Income Source and Knowledge of Serious Prenatal Conditions

Nonemployment Income Source	Knowledge of Serious Prenatal Conditions 0–2	3–4	5	Total
0	33	77	48	158
1	36	52	57	145
2	12	12	7	31
Total	31	141	112	334

X2=11.23 p=.0814

Table 23.8

Female Headed Household and Good Opinion of Breast Milk

Good Opinion on Breast Milk	Female Headed Household Yes	No	Total
Best	25	116	141
Same as Formula	15	49	64
Formula Better	14	21	35
Total	54	186	240

X2=8.02 p= .0181

Components of Table 24

Intermediate Measures - Resources
and
Intermediate Measures - Access

Table	
A24.1	Economic Stress and Transportation
A24.2	Economic Stress and Average Wait to See Child's Health Care Provider
A24.3	Economic Stress and Medicaid or Other Insurance
A24.4	Support Network and Medicaid or Other Insurance
A24.5	Family as Support Network and Transportation
A24.6	Family as Support Network and Satisfication with Child's Health Care
A24.7	Nonemployment Income Sources and Transportation
A24.8	Nonemployment Income Sources and Form of Payment for Prenatal Health Care
A24.9	Female Headed Household and Transportation
A24.10	Female Headed Household and Average Wait to See Child's Health Care Provider
A24.11	Female Headed Household and Form of Payment for Prenatal Health Care
A24.12	Female Headed Household and Medicaid or Other Insurance

Table A24.1

Economic Stress and Transportation

	Transportation		
Economic Stress	No	Yes	Total
Least	9	46	55
1	2	43	45
2	16	35	51
3	10	29	39
4	8	12	20
Most	11	6	17
Total	56	171	227

X2=30.39 p=.0000

Table A24.2

Economic Stress and Average Wait to See Child's Health Care Provider

	Average Wait to See Child's Health Care Provider				
Economic Stress	1/2 hr or less	1/2-1hr	1 1/2 hrs	2 1/2+ hrs	Total
Least	35	12	3	2	52
1	29	16	2	1	48
2	19	48	10	4	51
3	27	28	25	3	83
4	?	?	?	?	?
Most	?	"	"	"	"
Total	110	74	40	10	234

X2= 41.31 p=.0003

Table A24.3

Economic Stress and Medicaid or Other Insurance

	Medicaid or Other Insurance		
Economic Stress	No	Yes	Total
Least	19	53	72
1	25	42	67
2	24	42	66
3	28	27	55
4	17	25	42
Most	14	11	25
Total	127	200	327

X2=11.45 p=.0431

Table A24.4

Support Network and Medicaid or Other Insurance

	Medicaid or Other Insurance		
Support Network	No	Yes	Total
Least	2	0	2
2	9	7	16
3	17	36	53
4	30	62	92
Most	28	35	63
Total	86	140	226

X2=8.56 p=.0732

Table A24.5

Family as Support Network and Transportation

Family as Support Network	Transportation No	Yes	Total
Most Family Oriented	21	44	65
1	2	28	30
2	0	6	6
Least Family Oriented	2	0	2
Total	25	78	103

X2=15.51 P=.0014

Table A24.6

Family as Support Network and Satisfaction with Child's Health Care

Family as Support Network	Satisfaction with Child's Health Care No	Yes	Total
Most Family Oriented	1	62	63
1	4	29	33
2	0	5	5
Least Family Oriented	1	1	2
Total	6	97	103

X2=11.87 p=.0078

Table A24.7
Nonemployment Income Sources and Transportation

	Transportation		
Nonemployment Income Sources	No	Yes	Total
0	16	93	109
1	38	63	101
2	6	14	20
Total	60	170	230

X2=14.49 p=.0007

Table A24.8

Nonemployment Income Sources and Form of Payment for Prenatal Health Care

	Form of Payment for Prenatal Health Care					
Nonemployment Income Sources	Free	Medicaid	Private Payment	Work Insurance	Can't Pay	Total
0	8	10	19	17	2	56
1	9	22	7	4	3	45
2	1	5	2	1	2	11
Most	0	0	1	0	0	1
Total	18	37	29	22	7	113

X2=25.02 p=.0147

Table A24.9

Female Headed Household and Transportation

	Transportation		
Female Headed Household	No	Yes	Total
Yes	27	28	55
No	34	150	184
Total	61	178	239

X2=19.30 p=.0000

Table A24.10

Female Headed Household and Average Wait to See Child's Health Care Provider

	Average Wait to See Child's Health Care Provider				
Female Headed Household	1/2 hr or less	1/2-1hr	1-2 hrs	2+ hrs	Total
Yes	18	22	12	4	56
No	96	57	29	7	189
Total	114	79	41	11	245

X2=6.44 p=.0921

Table A24.11

Female Headed Household and Form of Payment for Prenatal Health Care

	Form of Payment for Prenatal Health Care					
Female Headed Household	Free	Medicaid	Private Payment	Work Ins.	Can't Pay	Total
Yes	4	16	4	2	0	26
No	14	23	26	22	7	92
Total	18	39	30	24	7	118

X2=14.11 p=.0069

Table A24.12

Female Headed Household and Medicaid or Other Insurance

	Medicaid or Other Insurance		
Female Headed Household	No	Yes	Total
Yes	16	65	81
No	119	144	263
Total	135	209	344

X2=15.83 p=.0001

Components of Table 25

Intermediate Measures - Information

Table	
A25.1	Birth Control Knowledge and Knowledge of Prenatal Conditions
A25.2	Birth Control Knowledge and Knowledge of Serious Prenatal Conditions
A25.3	Family as Information Source and Good Opinion of Breast Milk
A25.4	Good Opinion of Breast Milk and Knowledge of Prenatal Conditions

Table A25.1

Birth Control Knowledge and Knowledge of Prenatal Conditions

	Knowledge of Prenatal Conditions				
Birth Control Knowledge	0–4	5–6	6–8	9–10	Total
No	5	10	14	11	49
Yes	25	32	87	158	302
Total	30	42	101	169	342

X2=11.55 p=.0091

Table A25.2

Birth Control Knowledge and Knowledge of Serious Prenatal Conditions

	Knowledge of Serious Prenatal Conditions			
Birth Control Knoweldge	0 - 2	3 - 4	5	Total
No	14	21	5	40
Yes	69	128	110	307
Total	83	149	115	347

X2=9.10 p=.0106

Table A25.3

Family as Information Source and Good Opinion of Breast Milk

	Good Opinion of Breast Milk			
Family as Information Source	Breast milk best	Same	Formula better	Total
Most	5	3	3	11
3	18	7	7	32
2	32	10	1	43
Least	3	4	0	7
Total	58	24	11	93

X2=14.16 p=.0279

Table A25.4

Good Opinion of Breast Milk and Knowledge of Prenatal Conditions

	Knowledge of Prenatal Conditions				
Opinion of Breast Feeding	0 to 4	5 and 6	7 and 8	9 and 10	Total
Best	8	18	37	77	140
Same as Formula	6	9	17	30	62
Formula Better	11	4	10	8	33
Total	25	31	64	115	235

X2=24.66 p=.0004

Components of Table 26

Intermediate Measures - Access

Table	
A26.1	Transportation and Average Wait to See Child's Health Care Provider
A26.2	Transportation and Satisfaction with Child's Health Care

Table A26.1

Transportation and Average Wait To See Child's Health Care Provider

Transportation	Average Wait to See Child's Health Care Provider				
	1/2 hr.	1/2 to 1 hr	1 to 2 hours	2 hrs or More	Total
No	21	21	14	4	60
Yes	89	57	21	6	173
Total	110	78	35	10	233

X2=7.39 p=.0605

Table A26.2

Transportation and Satisfaction with Child's Health Care

Transportation	Satisfaction With Child's Health Care		
	No	Yes	Total
No	8	51	59
Yes	10	161	171
Total	18	212	230

X2=2.63 p=.1051